

649

# SURRA REPORT.

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## APPENDICES

INCLUDING

## RECORDS OF CASES, CHARTS

AND

## ILLUSTRATIONS

BY

ALFRED LINGARD,

Bachelor of Medicine and Master of Surgery, Duneim ;

Diplomate in Public Health, Cambridge ;

Fellow of the Bombay University ;

Professor of Bacteriology and Comparative Pathology,

Civil Veterinary Department, India.

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VOL. II, PART II.



Bombay:

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1898.









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## APPENDICES

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## RECORDS OF CASES, CHARTS

AND

## ILLUSTRATIONS,

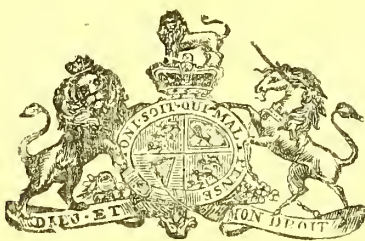
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VOL. II. PART II.



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1898.



5C(4)

|                               |           |
|-------------------------------|-----------|
| ROYAL CANADIAN MOUNTED POLICE |           |
| NAME                          |           |
| ADDRESS                       | 4470 10th |
| CITY                          |           |
| STATE                         |           |

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TABLE I.

Shewing the Animals inoculated with the blood of the Rat (Mus decumanus), either directly or indirectly.

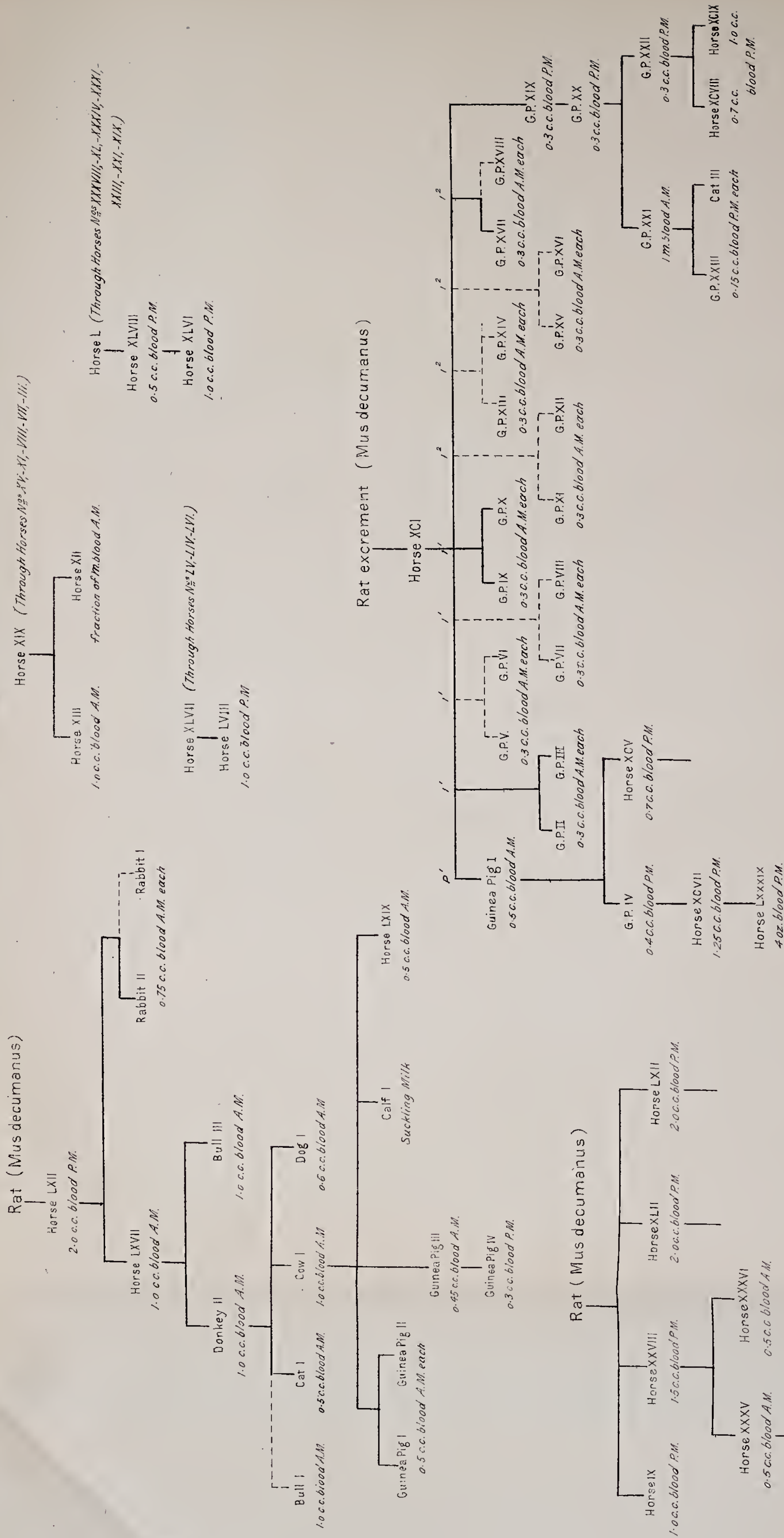
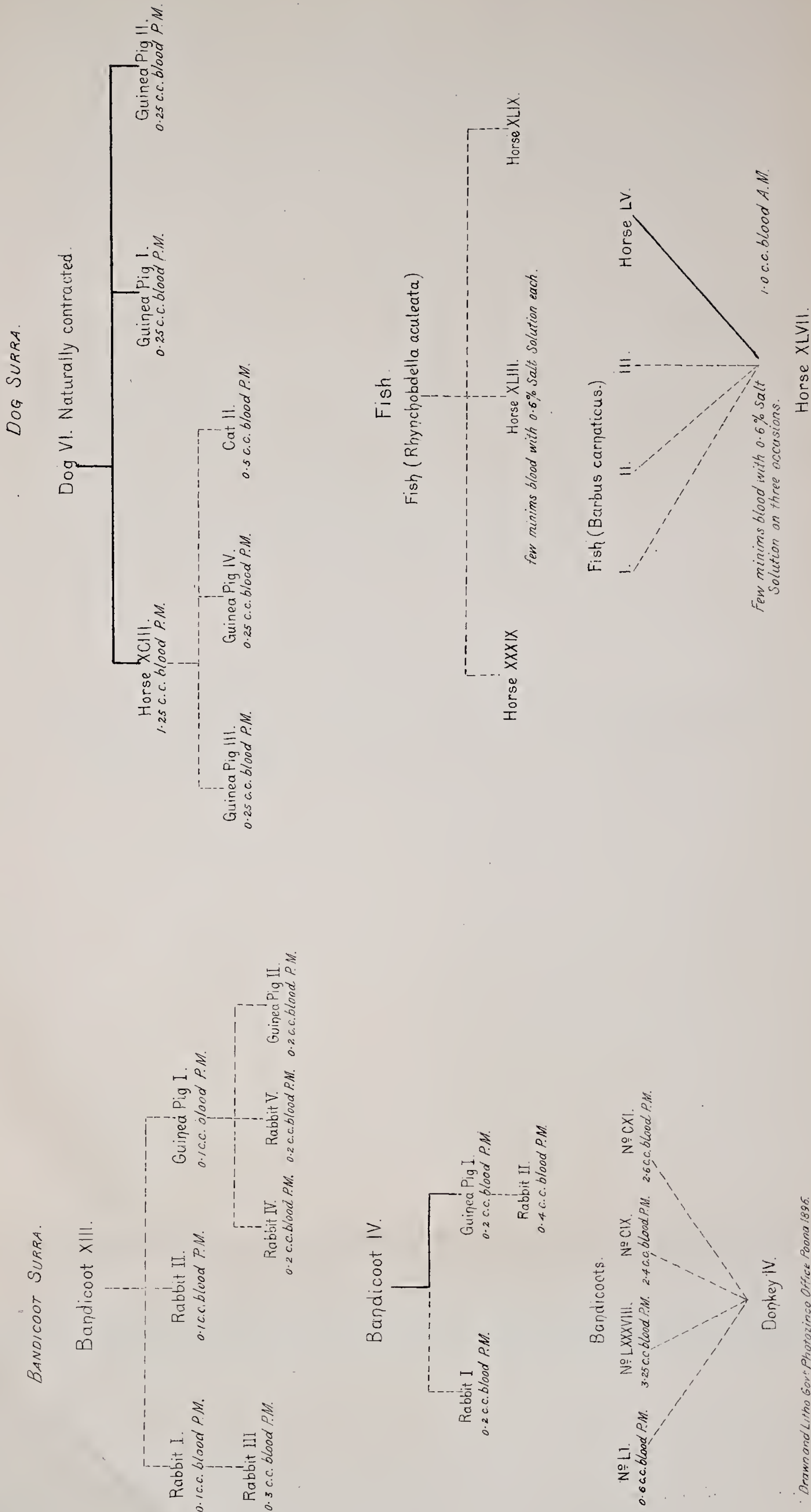




TABLE II.

Shewing the Animals inoculated with blood containing Hæmatozoa, from Bandicoot, Dog, and Fish, either primarily or through other Animals.







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A.

HORSE SURRA

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APPENDIX I.

NATURALLY CONTRACTED SURRA CASES.

HORSES. Nos. CIV, CVII, CVIII, CIX, CX, CXI, CXII, CXIII, CXIV,  
CXV (CURED), CXVI, CXVII, CXVIII, CXIX, CXX, CXXI, CXXII  
CXXIII, CXXIV, CXXV.

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## HORSE No. CIV.

Bay Mare, New Zealand, aged 11 years, belonging to the Bombay Tramway Company, was purchased in March 1888 and has since done excellent work. On August 9th, 1894, she was relieved from work as she was looking thin and out of sorts. On August 11th, the animal was suffering from fever. Temp. 40·4°C. Pulse 72. On microscopical examination of the blood, numerous Surra hæmatozoa were discovered.

August 13th, 1894, 8 A.M.—The mare arrived at the Laboratory Hospital, Poona.

*State on Admission.*—The animal is in rather poor condition and dull, the visible mucous-membranes are injected, the conjunctivæ are stained a yellow colour. There are large claret-coloured extravasations involving the membranæ nictitantes in both eyes. The skin is cool, and there is no fever present. Temp. A.M. 38·6°C. The pulse is somewhat accelerated and easily compressible, 45 per minute. The respirations are increased in number, 25 per minute. The extremities are fine, but there appears to be the remains of an urticarial eruption on the skin over the ribs and abdomen. The appetite is good and the dung healthy in appearance, but the urine is passed frequently and in small quantities. The hæmatozoa are numerous and active in the blood. The red corpuscles run together and the white are normal in size and number.

| Month and Date. | Temperature °C. |      |      | Pulse. |    | Respiration |    | Hæmatozoa in Blood. | Medicine administered.                             | REMARKS.   |
|-----------------|-----------------|------|------|--------|----|-------------|----|---------------------|--|--|
| 1894.           |                 |      |      |        |    |             |    |                     | A.M. P.M.  |  |
| August 13 ...   | 38·6            | 39·3 | 39·6 | 45     | 54 | 25          | 15 | Nu-<br>merous.      | (Arsenic<br>(Liq. Ar-<br>senicalis.)<br>Grs. Grs.) | Right conjunctiva yellow, with 4 claret-coloured petechiæ. Left conjunctiva yellow, one small extravasation. |
| „ 14 ...        | 40·8            | 39·6 | 39·0 | 75     | 54 | 36          | 12 | Few ...             | iv   | Both conjunctivæ very yellow, left conjunctiva many claret-coloured petechiæ.                                |
| „ 15 ...        | 37·7            | 37·8 | 38·2 | 44     | 40 | 40          | 35 | Do. ...             | iv iv  | Conjunctivæ unchanged. Urticarial eruption between the thighs. Anus patent.                                  |
| „ 16 ...        | 38·2            | 38·4 | 38·4 | 39     | 41 | 34          | 30 | Do. ...             | iv iv iv   | Slight urticarial eruption on neck. Conjunctiva clearer, each, one extravasation.                            |
| „ 17 ...        | 39·6            | 39·6 | 38·9 | 48     | 48 | 32          | 24 | Do. ...             | iv iv iv   | Animal brighter. Conjunctivæ almost clear.   |
| „ 18 ...        | 38·2            | 38·0 | 38·3 | 44     | 44 | 24          | 25 | Absent.             | vi vi  | Animal brighter. Conjunctivæ slightly yellow, no petechiæ.   |
| „ 19 ...        | 38·3            | 38·3 | 38·3 | 47     | 44 | 21          | 30 | Do. ...             | vi vi  | Animal bright. Conjunctivæ clear.  |
| „ 20 ...        | 38·1            | 38·2 | 38·2 | 42     | 45 | 22          | 26 | Do. ...             | vi vi  | Right conjunctiva several petechiæ. Left conjunctiva, one.   |
| „ 21 ...        | 38·3            | 38·3 | 38·5 | 44     | 51 | 24          | 33 | Do. ...             | vi vi  | Right conjunctiva two petechiæ. Left conjunctiva, several.   |
| „ 22 ...        | 38·2            | 38·8 | 38·6 | 48     | 51 | 23          | 25 | Do. ...             | vi vi  | Both conjunctivæ petechiated. Slight discharge from eyes. Right cheek swollen.                               |
| „ 23 ...        | 39·3            | 39·6 | 40·0 | 55     | 61 | 22          | 27 | Do. ...             | v v  | Animal dull, conjunctivæ injected, few minute petechiæ. Swollen cheek, soft and œdematous.                   |
| „ 24 ...        | 39·5            | 40·0 | 39·9 | 60     | 67 | 32          | 33 | Do. ...             | v v  | Conjunctivæ injected, few petechiæ, discharge from left eye.   |
| „ 25 ...        | 39·6            | 40·1 | 40·3 | 61     | 67 | 28          | 40 | Do. ...             | iv iv  | Right conjunctiva clear. Left conjunctiva, seven petechiæ.   |
| „ 26 ...        | 38·4            | 39·6 | 39·6 | 60     | 64 | 28          | 40 | Do. ...             | iv iv  | Animal dull, conjunctivæ congested, some petechiæ, slight discharge from both eyes.                          |
| „ 27 ...        | 38·4            | 39·2 | 38·8 | 51     | 56 | 35          | 40 | Do. ...             | iv iv  | Conjunctivæ injected and petechiated.  |
| „ 28 ...        | 38·5            | 39·0 | 39·0 | 48     | 57 | 27          | 42 | Do. ...             | iv iv  | Conjunctivæ slightly yellow and petechiated.   |
| „ 29 ...        | 38·6            | 38·6 | 39·3 | 48     | 54 | 32          | 43 | Do. ...             | iv iv  | Conjunctivæ slightly yellow and petechiated.   |
| „ 30 ...        | 38·7            | 39·1 | 39·1 | 52     | 54 | 31          | 38 | Do. ...             | iv iv  | Conjunctivæ clearer, traces of petechiæ.   |
| „ 31 ...        | 39·0            | 39·1 | 39·4 | 53     | 51 | 38          | 39 | Do. ...             | iv vi  | Conjunctivæ orange and petechiated.  |
| Sept. 1 ...     | 39·3            | 40·0 | 39·6 | 52     | 62 | 40          | 40 | Do. ...             | vi vi  | Right conjunctiva yellow, few petechiæ. Left conjunctiva yellow.   |
| „ 2 ...         | 39·5            | 39·7 | 38·8 | 60     | 57 | 38          | 36 | Do. ...             | vi vi  | Right conjunctiva yellow, no petechiæ. Left conjunctiva yellow, one extravasation.                           |
| „ 3 ...         | 38·7            | 39·0 | 38·7 | 56     | 55 | 35          | 31 | Do. ...             | vi vi  | Animal losing flesh, slight eruption on ribs and shoulders, conjunctivæ clearer.                             |
| „ 4 ...         | 39·1            | 39·7 | 39·3 | 57     | 56 | 31          | 25 | Do. ...             | vi vi  | Eruption continues. Right conjunctiva yellow, one extravasation. Left conjunctiva clear.                     |
| „ 5 ...         | 39·1            | 39·2 | 39·1 | 52     | 54 | 32          | 26 | Do. ...             | iii 0  | Eruption continues, conjunctivæ yellowish green.   |

| Month and Date. |        | Temperature °C.  |      |      | Pulse. |    | Respiration. |    | Hæmatozoa, in Blood. | Medicine administered. |           | REMARKS.   |
|-----------------|--------|------------------|------|------|--------|----|--------------|----|----------------------|------------------------|-----------|--|
| 1894.           |        |                  |      |      |        |    |              |    |                      | A.M. Grs.              | P.M. Grs. |  |
| Sept.           | 6 ...  | 39.1             | 39.4 | 39.4 | 53     | 60 | 35           | 34 | Absent...            | ...                    | ...       | Eruption continues, conjunctivæ clear, but yellow.   |
| "               | 7 ...  | 39.3             | 39.6 | 39.5 | 55     | 55 | 33           | 35 | Do. ...              | ...                    | iii       | Slight swelling on left shoulder, œdematous. Conjunctivæ unchanged.                        |
| "               | 8 ...  | 39.1             | 39.3 | 39.7 | 50     | 53 | 30           | 24 | Do. ...              | iii                    | iii       | Conjunctivæ unchanged.   |
| "               | 9 ...  | 39.6             | 40.1 | 40.0 | 54     | 60 | 28           | 32 | Do. ...              | ii                     | ...       | Do. do.  |
| "               | 10 ... | 39.7             | 40.0 | 39.8 | 52     | 53 | 26           | 27 | Do. ...              | ...                    | ...       | Do. do.  |
| "               | 11 ... | 39.6             | 39.6 | 40.3 | 54     | 68 | 28           | 26 | Do. ...              | ...                    | ...       | Do. do.  |
| "               | 12 ... | 39.4             | 39.9 | 40.6 | 53     | 72 | 24           | 16 | Do. ...              | ...                    | ...       | Do. do. Animal has a slight cough.   |
| "               | 13 ... | 40.7             | 40.8 | 40.5 | 72     | 68 | 24           | 22 | Do. ...              | ...                    | ...       | Animal brighter, conjunctivæ yellow. Right conjunctiva, few petechiæ. Anus patent.         |
| "               | 14 ... | 40.0             | 40.2 | 40.6 | 62     | 65 | 24           | 18 | Do. ...              | ...                    | ...       | Conjunctivæ unchanged. Rectum closed.  |
| "               | 15 ... | 40.1             | 39.5 | 39.4 | 59     | 66 | 36           | 36 | Do. ...              | ...                    | ...       | Conjunctivæ unchanged.   |
| "               | 16 ... | 39.2             | 40.0 | 40.6 | 60     | 72 | 20           | 18 | Do. ...              | ...                    | ...       | Right conjunctiva less yellow, three petechiæ. Left conjunctiva yellow, one extravasation. |
| "               | 17 ... | 41.3             | 41.2 | 40.3 | 80     | 84 | 32           | 26 | Do. ...              | ...                    | ...       | Conjunctivæ orange and petechiated, neck and limbs slightly swollen.                       |
|                 |        | Death at 12 A.M. |      |      |        |    |              |    |                      |                        |           |  |

September 17th, 1894.—Autopsy 12 hours after death.

The body is well nourished. There is an entire absence of œdema from the extremities and under-surface of the abdomen.

*Thorax*.—The right pleural cavity contains 6 ounces and the left 7 ounces of a turbid, orange-coloured fluid. The left lung is adherent to the costal pleura.

*Trachea* contains a certain amount of frothy mucus, and the mucous membrane covering the lower third of the tube is congested.

*Lungs*.—The *right* is fully distended with air and on section presents a healthy appearance. The surface of the left is dotted over with dark-coloured patches, due to small extravasations of blood, lying under the visceral pleura. The apex and the tissues for eight inches posteriorly are of a dark reddish hue, while the remaining portion of the organ is fully distended with air. On section the anterior lobule is consolidated, and the individual lobules are insulated by a thin layer of exudation. The *pericardial* sac contains a small quantity of a turbid orange-coloured fluid.

*Heart* weighs 6 lbs. 8 ozs. The right side of the heart contains orange-coloured clots. The right ventricle presents a few sub-endocardial petechiæ, but they are absent from the auricle. The cavities on the left side of the organ are both petechiated. The valves are healthy.

There are several pints of an orange-coloured fluid in the cavity of the peritoneum.

*Liver* weighs 13 lbs. 12 ozs. The capsule covering the convex surface of the organ is the seat of old inflammation. On section the tissues are dark in colour and somewhat friable.

*Spleen* weighs 4 lbs. 2 ozs. The capsule is dotted over with a few brick-red coloured petechiæ, but on section the tissues are firm and of a healthy colour.

*Kidneys*.—The right weighs 2 lbs., the left weighs 2 lbs. 2 ozs. The capsules strip easily. The surfaces of both organs are covered with small petechiæ. On section the cortical portions are normal in extent, but the Malpighian corpuscles are prominent and of a bright red colour.

*Stomach* is small, and on section is found to contain semi fluid food, yellow in colour. The *cuticular* portion presents a healthy appearance, but the mucous membrane of the *villous portion* is congested, and dotted over with small circular patches, the majority red, whilst the remainder are almost black in colour, due to small extravasations of blood in and beneath the inner coat of the organ.

*Small intestines*.—There are small dark-coloured patches and extravasations into the submucoid tissue throughout its whole length.

*Large intestine*.—Apparently healthy.

*Bladder*.—The mucous membrane is slightly congested, but there are no petechiæ present.

#### HORSE No. CVII.

Grey Australian Gelding, aged 14 years, belonging to the Bombay Tramway Company (No. 536). The animal was first observed to be ailing on 23rd September 1894; was removed forthwith to the Infirmary, and the Surra hæmatozoon was discovered on microscopical examination of the blood on the same day.

September 25th.—The horse arrived at the Laboratory Hospital, Poona.

*State on Admission*.—The animal is in fair condition, the visible mucous membranes are clear, and the conjunctivæ are free from petechiæ. The skin is cool. Temp. 38.5°C. Pulse 52. Respirations accelerated, 34 per minute. There is some swelling and œdema of the sheath, which extends along the under-surface of the abdomen and on to the front of the chest, which clearly proves that the disease is of some days standing. The appetite is good. The excreta presents a healthy appearance. The hæmatozoa are few in the blood. The red blood corpuscles form fairly healthy rouleaux and the white are normal as regards size and number.



The animal was ordered Liq. Arsenicalis 3i night and morning.

| Month and Date. | Temperature °C. |               |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine.       |        |        | REMARKS.  |
|-----------------|-----------------|---------------|--------|--------|------|--------------|------|---------------------|-----------------|--------|--------|---|
|                 | A.M.            | 1 P.M.        | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | A.M.            | 1 P.M. | 5 P.M. |   |
| 1894.           |                 |               |        |        |      |              |      |                     | Arsenic Grains. |        |        |   |
| Sept. 25 ...    | 38.5            | 38.8          | 38.4   | 52     | 52   | 34           | 28   | Few ...             | ...             | ...    | iv     | Conjunctivæ clear, slight œdema between fore limbs.                                 |
| " 26 ...        | 39.2            | 39.4          | 39.3   | 52     | 52   | 31           | 26   | Numerous.           | ivss            | ...    | ivss   | Animal dull, hind limbs swollen, conjunctivæ orange and petechiated.                |
| " 27 ...        | 39.6            | 40.0          | 40.2   | 56     | 58   | 36           | 34   | Do. ...             | v               | ...    | v      | All fore limbs and sheath swollen, conjunctivæ unchanged.                           |
| " 28 ...        | 40.0            | 40.0          | 39.3   | 60     | 54   | 42           | 40   | Few ...             | vss             | ...    | vss    | Edema extended beneath abdomen.   |
| " 29 ...        | 38.7            | 39.3          | 39.1   | 62     | 60   | 38           | 38   | Absent .            | vi              | ...    | vi     | Condition unchanged.  |
| " 30 ...        | 39.1            | 38.3          | 39.4   | 62     | 64   | 26           | 28   | Do. ...             | vi              | ...    | ...    | Condition unchanged.  |
| October 1 ...   | 38.5            | 38.8          | 39.1   | 56     | 58   | 30           | 20   | Do. ...             | ...             | ...    | ...    | Diarrhœa.   |
| " 2 ...         | 39.1            | 39.6          | 39.7   | 60     | 64   | 21           | 22   | Do. ...             | ...             | ...    | ...    | Edema of limbs, sheath, and abdomen continues. The animal emits an offensive odour. |
| " 3 ...         | 38.6            | 38.6          | 39.1   | 60     | 70   | 34           | 12   | Do. ...             | ...             | ...    | ...    | Condition unchanged. Diarrhœa continues.  |
| " 4 ...         | 40.3            | ...           | ...    | 112    | ...  | 28           | ...  | Do. ...             | ...             | ...    | ...    | Conjunctivæ yellow and petechiated.   |
|                 | Death           | at 12.50 P.M. |        |        |      |              |      |                     |                 |        |        |   |

4th October 1894.—Autopsy 1½ hours after death.

The body is somewhat emaciated, but there is a total absence of œdema from the extremities and the under-surface of the abdomen.

*Thorax*.—The pleural cavities contain some ounces of a semi-turbid fluid.

*Lungs*.—There is a localized emphysema at the apices and along the free edges of the organs. The surfaces of the organs are dotted over with ecchymoses lying under the pleuræ, and are for the most part circular in contour, varying in size from  $\frac{3}{4}$  to  $\frac{1}{2}$  of an inch in diameter. The right lung and about  $\frac{2}{3}$  of the left lung are fully distended with air, but there is consolidation of the posterior  $\frac{1}{3}$  of the left. On section the tissue presents a dark appearance and the individual lobules are divided from each other by a layer of orange-coloured jelly.

The pericardial sac contains several ounces of a semi-turbid fluid. Heart is considerably hypertrophied and weighs 7 lbs. 13 ozs. There are numerous small extravasations of blood of a light red colour, lying beneath the visceral pericardium, especially around the base of the organ. On section the right side of the heart is flaccid containing a few black clots, the walls are thin, but there are no ecchymoses in either cavity. The valves are healthy. The left side is contracted, the auricle is healthy, but the ventricular walls are considerably hypertrophied. There are a few ecchymoses involving the roots of the musculi-papillares.

The peritoneal cavity contains nearly twenty ounces of fluid.

*Liver* weighs 22 lbs. 0½ oz. There are a number of opalescent patches varying in size from  $\frac{1}{2}$  to 2 inches in diameter involving Glisson's Capsule. On section a limited amount of blood exudes from the cut ends of the vessels. The tissues are somewhat dark in colour but firm to the touch.

*Spleen* weighs 3 lbs. 6 ozs. The organ is nearly double its normal size. The convex surface and borders of the organ are petechiated, but on section the tissues are firm and normal in appearance.

*Kidneys* enormously enlarged. The right weighs 3 lbs. 3 ozs., the left 3 lbs. 9 ozs. The capsules strip easily and disclose the petechiated condition of the surfaces of the organ. On section the cortical portion appears to be thicker than normal, and the Malpighian corpuscles stand out well marked.

*Stomach* is full of semi-digested food.

On section the cuticular portion presents a normal appearance; there is, however, a patch of congestion involving the mucous membrane of the villous portion near the pyloric extremity.

*Small Intestine* is petechiated, and there is well marked congestion of the mucous membrane throughout.

*Large Intestine* presents a healthy appearance.

*Bladder* presents a healthy appearance.

#### HORSE No. CVIII.

Grey Arab Entire Horse, aged, forwarded by Messrs. Scott & Co., Bombay. The previous history of this case was not obtained for record.

25th September 1894.—The horse arrived at the Laboratory Hospital, Poona.

*State on admission*.—The animal is in poor condition, and has evidently been suffering from Surra for a considerable time. The visible mucous membranes are stained an orange colour, both conjunctivæ are petechiated, especially the membranæ nictitantes. The skin is cool, and there is no fever present. Temp. A.M. 38.2°C. The pulse is accelerated and thready in character, 50 per minute. Respirations rather shallow, 28. The scrotum and sheath are the seat of considerable swelling and œdema, and the fetlocks are involved to a certain extent. The appetite is poor, the animal

refusing its ration of corn, but eats lucerne and a little hay. The *sphincter ani* is relaxed and a glairy fluid, tinged with blood, exudes from the bowel. The hæmatozoon is absent from the blood.

| Month and Date. |       | Temperature °C. |         |         | Pulse. |      | Respiration. |      | Hæmato-<br>zoa in<br>Blood. | Medicine.     |        |               | REMARKS.   |
|-----------------|-------|-----------------|---------|---------|--------|------|--------------|------|-----------------------------|---------------|--------|---------------|--|
|                 |       | A.M.            | 1. P.M. | 5. P.M. | A.M.   | P.M. | A.M.         | P.M. |                             | A.M.          | 1 P.M. | 5 P.M.        |  |
| 1894.           |       |                 |         |         |        |      |              |      |                             | Arse-<br>nic. |        | Arse-<br>nic. |  |
| Sept.           | 25... | 38.2            | 38.8    | 38.6    | 50     | 56   | 28           | 30   | Absent.                     | ...           | ...    | ...           | Conjunctivæ orange and pete-<br>chiated, fetlocks swollen,<br>anus patent.                                     |
|                 | 26... | 38.7            | 39.5    | 39.1    | 56     | 62   | 36           | 26   | Few                         | ...           | ...    | ...           | Slight urticarial eruption.<br>Testicles swollen.  |
|                 | 27... | 39.3            | 40.1    | 40.5    | 65     | 76   | 64           | 50   | Numer-<br>ous.              | Grs. iv       | ...    | Grs. v        | Swelling of testicles increased.<br>Conjunctivæ unchanged.   |
|                 | 28... | 40.1            | 40.3    | 40.5    | 76     | 84   | 62           | 50   | Do.                         | vss           | ...    | vss           | Hind limbs and testicles<br>swollen, fetlocks weak.  |
|                 | 29... | 38.5            | 38.2    | 37.6    | 72     | 66   | 46           | 50   | Absent.                     | vi            | ...    | vi            | Condition unchanged.   |
|                 | 30... | 38.1            | 39.2    | 38.1    | 76     | 76   | 46           | 36   | "                           | vi            | ...    | vi            | Do. do.  |
| October         | 1...  | 38.0            | 38.0    | 37.8    | 62     | 64   | 46           | 32   | "                           | vi            | ...    | viss          | Do. do.  |
|                 | 2...  | 37.5            | 37.6    | 37.7    | 60     | 62   | 36           | 54   | "                           | ...           | ...    | vii           | Conjunctivæ clearer, testicles<br>less swollen.  |
|                 | 3...  | 37.2            | 37.3    | 37.6    | 66     | 78   | 40           | 36   | "                           | vii           | ...    | viss          | Edema beneath abdomen,<br>testicles normal in size.  |
|                 | 4...  | 37.8            | 37.4    | 37.2    | 56     | 68   | 34           | 34   | "                           | viss          | ...    | ...           | Conjunctivæ yellow and pete-<br>chiated.   |
|                 | 5...  | 36.6            | 37.6    | 37.8    | 70     | 78   | 34           | 36   | "                           | vi            | ...    | iv            | Do. do.  |
|                 | 6...  | 37.6            | 37.8    | 38.2    | 74     | 80   | 36           | 56   | "                           | iv            | ...    | iii           | Conjunctivæ clearer.   |
|                 | 7...  | 37.8            | 38.2    | 38.1    | 76     | 78   | 38           | 40   | "                           | iii           | ...    | iii           | Do. do.  |
|                 | 8...  | 37.8            | 38.4    | 38.1    | 72     | 80   | 40           | 50   | "                           | iii           | ...    | iii           | Slight discharge from both<br>eyes. Right conjunctiva<br>presents traces of petechiæ,<br>left, two ecchymoses. |
|                 | 9...  | 37.7            | 38.0    | 37.8    | 66     | 72   | 30           | 36   | "                           | iii           | ...    | iii           | Conjunctivæ clear.   |
|                 | 10... | 38.1            | 38.2    | 38.4    | 68     | 40   | 44           | 56   | "                           | iii           | ...    | iii           | Right conjunctiva petechiated,<br>left, clear.   |
|                 | 11... | 37.7            | 38.2    | 38.3    | 66     | 76   | 42           | 60   | "                           | iii           | ...    | iii           | Condition unchanged.   |
|                 | 12... | 38.4            | 38.2    | 38.4    | 68     | 72   | 70           | 60   | "                           | iii           | ...    | iv            | Conjunctivæ clear.   |
|                 | 13... | 37.8            | 38.5    | 38.8    | 68     | 70   | 60           | 60   | "                           | iv            | ...    | iv            | Do.  |
|                 | 14... | 39.3            | 40.0    | 40.0    | 76     | 82   | 48           | 40   | "                           | iv            | ...    | ivss          | Conjunctivæ slightly pete-<br>chiated.   |
|                 | 15... | 40.1            | 40.2    | 40.3    | 80     | 80   | 42           | 44   | "                           | ivss          | ...    | ivss          | Conjunctivæ faintly yellow,<br>white discharge from both<br>eyes.  |
|                 | 16... | 40.2            | 40.0    | 40.0    | 74     | 78   | 54           | 56   | "                           | ivss          | ...    | v             | Do. do.  |
|                 | 17... | 39.1            | 39.1    | 38.8    | 78     | 68   | 52           | 56   | "                           | ▼             | ...    | v             | Right conjunctiva injected;<br>discharge from both eyes.   |
|                 | 18... | 38.0            | 38.3    | 38.4    | 60     | 72   | 24           | 48   | "                           | v             | ...    | vss           | Conjunctivæ slightly pete-<br>chiated.   |
|                 | 19... | 37.8            | 38.0    | 38.2    | 64     | 68   | 52           | 52   | "                           | vss           | ...    | vss           | Do. do.  |
|                 | 20... | 37.8            | 38.1    | 38.2    | 60     | 72   | 40           | 24   | "                           | vss           | ...    | vi            | Right conjunctiva one ex-<br>travasation, left, 3 petechiæ.  |
|                 | 21... | 38.2            | 38.1    | 38.4    | 68     | 76   | 44           | 48   | "                           | vi            | ...    | vi            | Conjunctivæ slightly petechi-<br>ated, flatulence, animal<br>putting on flesh.                                 |
|                 | 22... | 37.8            | 38.3    | 38.5    | 76     | 76   | 32           | 64   | "                           | vi            | ...    | vi            | Do. do.  |
|                 | 23... | 38.1            | 38.0    | 37.8    | 60     | 72   | 28           | 36   | "                           | vi            | ...    | vi            | Do. do.  |
|                 | 24... | 38.0            | 39.1    | 39.4    | 64     | 76   | 44           | 48   | "                           | vi            | ...    | v             | Right conjunctiva clear, left,<br>petechiated.   |
|                 | 25... | 38.0            | 38.3    | 38.5    | 64     | 64   | 32           | 56   | "                           | ...           | ...    | v             | Right conjunctiva clear, left,<br>slightly petechiated.  |
|                 | 26... | 37.7            | 38.3    | 38.2    | 64     | 72   | 52           | 36   | "                           | ...           | ...    | v             | Do. do.  |
|                 | 27... | 38.2            | 38.1    | 38.3    | 64     | 68   | 32           | 48   | "                           | ...           | ...    | ...           | Conjunctivæ clear, several<br>small ulcers appeared on<br>scrotum.   |
|                 | 28... | 38.2            | 38.4    | 38.2    | 64     | 68   | 40           | 28   | "                           | ▼             | ...    | v             | General condition unchang-<br>ed, but animal is a little<br>dull.  |
|                 | 29... | 37.6            | 38.3    | 38.5    | 56     | 64   | 32           | 28   | "                           | v             | ...    | v             | Ulcers dry, treated with Iodo-<br>form. Right conjunctiva<br>faintly petechiated.                              |
|                 | 30... | 38.3            | 38.4    | 38.7    | 64     | 76   | 32           | 44   | "                           | iiss          | ...    | ivss          | Conjunctivæ unchanged.   |
|                 | 31... | 39.2            | 38.6    | 39.3    | 72     | 80   | 44           | 36   | "                           | ivss          | ...    | ivss          | Animal dull, thinner, and dis-<br>charge from both eyes.   |
| November        | 1...  | 38.6            | 39.6    | 39.8    | 68     | 84   | 14           | 24   | "                           | ivss          | ...    | iv            | Conjunctivæ petechiated.   |
|                 | 2...  | 39.1            | 39.8    | 40.3    | 80     | 92   | 20           | 44   | "                           | iv            | ...    | iv            | Right conjunctiva injected,<br>left, petechiated.  |



| Month and Date. | Temperature °C. |         |         | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine.     |               |               | REMARKS.   |
|-----------------|-----------------|---------|---------|--------|------|--------------|------|---------------------|---------------|---------------|---------------|--|
|                 | A.M.            | I. P.M. | 5. P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | A.M.          | I. P.M.       | 5. P.M.       |  |
| 1894.           |                 |         |         |        |      |              |      |                     | Arse-<br>nic. | Arse-<br>nic. | Arse-<br>nic. |  |
| November 3...   | 39.2            | 40.1    | 40.3    | 76     | 76   | 16           | 48   | Absent.             | Grs. iv       | ...           | Grs. iii      | Right conjunctiva clear, lower eyelid swollen, discharge continues.                    |
| " 4...          | 39.5            | 40.3    | 40.4    | 76     | 88   | 20           | 56   | "                   | iii           | ...           | iii           | Condition unchanged.   |
| " 5...          | 38.6            | 40.1    | 40.0    | 72     | 80   | 16           | 60   | "                   | iii           | ...           | iii           | Abscess on lower eyelid burst and pus exuded; left conjunctiva yellow and petechiated. |
| " 6...          | 38.0            | 38.6    | 39.0    | 68     | 76   | 20           | 56   | "                   | iii           | ...           | iii           | Discharge from ulcer continues.  |
| " 7...          | 38.0            | 38.4    | 39.2    | 60     | 76   | 12           | 52   | "                   | iii           | ...           | iii           | Conjunctivæ unchanged; discharge continues.  |
| " 8...          | 38.0            | 38.6    | 39.5    | 60     | 72   | 16           | 36   | "                   | iii           | ...           | iii           | Do. do.  |
| " 9...          | 38.8            | 39.3    | 39.7    | 68     | 72   | 16           | 32   | "                   | iii           | ...           | iii           | Do. do.  |
| " 10...         | 39.3            | 39.8    | 39.8    | 64     | 72   | 24           | 36   | "                   | iii           | ...           | iii           | Right conjunctiva clear, left, dirty yellow.   |
| " 11...         | 39.1            | 40.3    | 40.3    | 76     | 84   | 12           | 48   | "                   | iii           | ...           | ...           | Conjunctivæ unchanged; abdominal pains.  |
| " 12...         | 39.5            | 40.5    | 40.3    | 68     | 84   | 16           | 28   | "                   | ..            | ...           | ...           | General condition unchanged, left conjunctiva presents two petechiæ.                   |
| " 13...         | 39.1            | 40.1    | 40.4    | 64     | 80   | 12           | 24   | "                   | ...           | ...           | iii           | Do. do.  |
| " 14...         | 39.4            | 40.3    | 40.2    | 68     | 68   | 20           | 28   | "                   | iii           | ...           | ...           | Right conjunctiva yellow, left, unchanged.   |
| " 15...         | 39.8            | 40.2    | 40.7    | 72     | 76   | 16           | 24   | "                   | ...           | ...           | ...           | Conjunctivæ unchanged, slight discharge from nose.                                     |
| " 16...         | 40.3            | 40.4    | 40.6    | 68     | 72   | 16           | 36   | "                   | ...           | ...           | ...           | Abdominal pains recurring. Left conjunctiva presents several petechiæ.                 |
| " 17...         | 39.1            | 39.3    | 40.3    | 88     | 76   | 20           | 52   | "                   | ...           | ...           | ...           | Animal dull, head lowered to one side, frequent micturition.                           |
| " 18...         | 39.1            | 40.2    | 40.1    | 72     | 72   | 28           | 52   | "                   | ...           | ...           | ...           | Conjunctivæ dirty orange; ulcer beneath abdomen.                                       |
| " 19...         | 39.3            | 39.7    | 40.0    | 64     | 64   | 32           | 36   | "                   | ...           | ...           | ...           | Animal weaker; left conjunctiva petechiated.   |
| " 20...         | 38.3            | ...     | ...     | 64     | ...  | 24           | ...  | "                   | ...           | ...           | ...           | The animal fell, and death occurred at 12.50 P.M.                                      |

*Autopsy.*—20th November 1894 at 1.30 P.M., forty minutes *post mortem*. Body well nourished, some œdema of the extremities.

*Thorax.*—The pleural cavities each contain about one ounce of an orange-coloured fluid. No pleural adhesions.

*Right Lung.*—On the superior surface and about midway between the apex and base of the organ is a dark-coloured extravasation measuring 2" × 2½". On section it is found to lie beneath the pleura, and to invade the tissues to a depth of one inch. The remaining portion of the organ presents a healthy appearance and is distended with air. Left lung healthy.

The *pericardial sac* contains 10 ounces of a semi-turbid, orange-coloured fluid.

*Heart* weighs 4 lbs. 14 ozs. The external and internal surfaces of the organ are free from sub-pericardial and sub-endocardial ecchymoses. The valves present a healthy appearance.

The *abdominal cavity* contains four ounces of a light turbid fluid; on microscopical examination the *Surra* hæmatozoon was found to be absent from it.

*Liver* weighs 11 lbs. 6 ozs. The capsule presents signs of old perihepatitis, but on section the tissues appear healthy.

*Spleen* weighs 2 lbs. 0¾ oz. The surface of the organ is free from sub-capsular petechiæ, and on section, the tissues present a normal appearance.

*Kidneys.*—The right weighs 1 lb. 8 ozs., the left 1 lb. 6 ozs. On section the organs present a healthy appearance.

*Stomach* is somewhat small. The *cuticular* portion is healthy. The mucous membrane of the *villous* portion presents some streaky red lines on its surface.

*Intestines* healthy. *Bladder* healthy.

*Brain* presents a healthy appearance.

#### HORSE No. CIX.

Bay Entire Horse, Persian Gulf. This animal was in the charge of Inspector of G. Division, Bombay Police.

*Previous History.*—This animal had been stationed at Mahim for months, and was in good health and condition until October 7th, 1894, when it was recognized to be suffering from fever. On October 11th it was removed to the Veterinary College, Parel, for treatment, and remained in Hospital until November 4th, 1894, when it was sent to Poona.

*5th November.*—The animal was received at the Laboratory Hospital.

*State on admission.*—The animal is in fairly good condition, though considerably shaken by the journey. The skin is cool, but the visible mucous membranes are injected, and the left conjunctiva is petechiated. There is some



swelling and œdema of the scrotum and sheath, which extends along the under-surface of the abdomen on to the chest. Temp. A.M. 38.3°C., P. 48, R. 28. The hæmatozoa are few in the blood. Appetite good. Dung normal in appearance.

| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine.             | Sulphate of Iron. |      | REMARKS.   |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|-----------------------|-------------------|------|--|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |                       | Drachms.          |      |  |
| 1894.           |                 |        |        |        |      |              |      |                     | Arsenic.<br>(Grains.) |                   |      |  |
|                 |                 |        |        |        |      |              |      |                     | A.M. P.M.             | A.M.              | P.M. |  |
| November 5...   | 38.3            | 38.7   | 39.1   | 48     | 48   | 28           | 36   | Few.                | ... iv                | ...               | ...  | Right conjunctiva clear, left, injected and petechiated.   |
| „ 6...          | 38.7            | 39.3   | 39.2   | 40     | 56   | 16           | 40   | „                   | iv iv                 | ...               | ...  | Right conjunctiva clear, left, slightly petechiated.   |
| „ 7...          | 38.8            | 39.4   | 39.2   | 44     | 48   | 12           | 40   | „                   | iv v                  | ...               | ...  | Conjunctivæ unchanged, sheath and testicles swollen.   |
| „ 8...          | 39.1            | 39.4   | 38.8   | 48     | 48   | 28           | 32   | „                   | v v                   | ...               | ...  | Conjunctivæ clear, swelling extending beneath abdomen.   |
| „ 9...          | 38.2            | 38.6   | 38.4   | 44     | 44   | 24           | 28   | „                   | vi vi                 | ...               | ...  | Do. do.  |
| „ 10...         | 37.8            | 38.6   | 38.6   | 40     | 44   | 28           | 24   | Absent.             | vi vi                 | ...               | ...  | Swelling less.   |
| „ 11...         | 38.0            | 38.5   | 38.7   | 44     | 44   | 16           | 28   | „                   | ii vii                | ...               | ...  | Right conjunctiva petechiated, left, clear.  |
| „ 12...         | 38.0            | 38.5   | 38.5   | 48     | 36   | 16           | 16   | „                   | vii vii               | ...               | ...  | Right conjunctiva petechiated, left, injected.   |
| „ 13...         | 38.2            | 38.3   | 38.6   | 48     | 60   | 12           | 24   | „                   | vii vii               | ...               | ...  | Right, injected, left, injected.   |
| „ 14...         | 38.2            | 38.2   | 38.0   | 40     | 52   | 12           | 16   | „                   | vii vii               | ...               | ...  | Conjunctivæ unchanged.   |
| „ 15...         | 37.7            | 38.0   | 38.3   | 44     | 48   | 12           | 16   | „                   | vi vi                 | ...               | ...  | Do.  |
| „ 16...         | 38.0            | 38.1   | 38.3   | 48     | 48   | 16           | 28   | „                   | vi vi                 | ...               | ...  | Conjunctivæ injected, animal losing flesh.   |
| „ 17...         | 38.1            | 38.2   | 38.6   | 40     | 52   | 16           | 44   | „                   | vi v                  | ...               | ...  | Do. do.  |
| „ 18...         | 38.0            | 38.2   | 38.4   | 40     | 44   | 16           | 36   | „                   | v v                   | ...               | ...  | Conjunctivæ less injected.   |
| „ 19...         | 38.3            | 38.4   | 38.4   | 36     | 44   | 28           | 28   | „                   | v v                   | ...               | ...  | Conjunctivæ clear, discharge from nose. The eyes are dull.   |
| „ 20...         | 38.1            | 38.2   | 38.2   | 40     | 48   | 20           | 32   | „                   | iv iv                 | ...               | ...  | Conjunctivæ clear, discharge ceased.   |
| „ 21...         | 38.1            | 38.2   | 38.2   | 40     | 48   | 24           | 36   | „                   | iv iv                 | ...               | ...  | Do. do.  |
| „ 22...         | 38.2            | 38.1   | 38.2   | 40     | 40   | 20           | 28   | „                   | iv iv                 | ...               | ...  | Do. discharge recommenced, animal appears dull.  |
| „ 23...         | 38.2            | 38.0   | 38.4   | 40     | 36   | 18           | 32   | „                   | v v                   | ...               | ...  | Do. do.  |
| „ 24...         | 38.2            | 38.3   | 38.3   | 40     | 40   | 16           | 24   | „                   | v v                   | ...               | ...  | Do. do.  |
| „ 25...         | 38.3            | 38.2   | 38.3   | 36     | 36   | 12           | 24   | „                   | v v                   | ...               | ...  | Conjunctivæ slightly injected, discharge continues.  |
| „ 26...         | 38.6            | 38.3   | 38.3   | 44     | 44   | 32           | 28   | „                   | v v                   | ...               | ...  | Condition unchanged.   |
| „ 27...         | 38.5            | 38.3   | 38.4   | 44     | 44   | 20           | 20   | „                   | v v                   | ...               | ...  | Do.  |
| „ 28...         | 38.5            | 38.2   | 38.3   | 44     | 44   | 28           | 28   | „                   | v v                   | ...               | ...  | Do.  |
| „ 29...         | 38.2            | 38.3   | 38.6   | 44     | 40   | 28           | 36   | „                   | v v                   | ...               | ...  | Do.  |
| „ 30...         | 38.7            | 38.3   | 38.5   | 48     | 40   | 48           | 24   | „                   | v v                   | ...               | ...  | Do.  |
| December 1...   | 38.1            | 38.3   | 38.4   | 36     | 44   | 16           | 32   | „                   | v v                   | ...               | ...  | Do.  |
| „ 2...          | 38.5            | 38.4   | 38.3   | 40     | 40   | 36           | 28   | „                   | v v                   | ...               | ...  | Do.  |
| „ 3...          | 38.6            | 38.5   | 38.2   | 44     | 40   | 40           | 36   | „                   | v v                   | ...               | i    | Glairy discharge from nostrils.  |
| „ 4...          | 38.8            | 38.5   | 38.5   | 48     | 44   | 36           | 52   | „                   | v v                   | i                 | i    | Do.  |
| „ 5...          | 38.5            | 38.4   | 38.5   | 44     | 40   | 28           | 14   | „                   | v v                   | i                 | i    | Do.  |
| „ 6...          | 38.3            | 38.5   | 38.4   | 40     | 44   | 28           | 24   | „                   | v v                   | i                 | i    | Conjunctival membranes injected, due to Arsenic.   |
| „ 7...          | 38.5            | 38.4   | 38.4   | 40     | 36   | 24           | 28   | „                   | v vi                  | i                 | i    | Conjunctival membranes injected, eyes irritable, discharge from nostrils.                            |
| „ 8...          | 38.2            | 38.4   | 38.3   | 40     | 40   | 28           | 20   | „                   | vi vi                 | i                 | i    | The shoes were removed from all four feet, and revealed two corns on each foot.                      |
| „ 9...          | 38.2            | 38.4   | 38.4   | 36     | 40   | 20           | 24   | „                   | vi vi                 | i                 | i    | Conjunctivæ injected. No petechiæ.   |
| „ 10...         | 38.0            | 38.2   | 38.5   | 36     | 40   | 12           | 24   | „                   | vi vi                 | i                 | i    | Do. do.  |
| „ 11...         | 38.5            | 38.2   | 38.5   | 44     | 40   | 20           | 28   | „                   | vi vi                 | i                 | i    | Do. do.  |
| „ 12...         | 28.7            | 38.3   | 38.4   | 48     | 48   | 24           | 36   | „                   | vi vi                 | i                 | i    | Do. do.  |
| „ 13...         | 37.7            | 38.2   | 38.4   | 36     | 48   | 16           | 32   | „                   | vi vi                 | i                 | i    | Do. Discharge from nostrils continues.   |
| „ 14...         | 38.0            | 38.2   | 38.4   | 36     | 44   | 16           | 28   | „                   | vi vi                 | i                 | i    | Do. do.  |
| „ 15...         | 38.2            | 38.4   | 38.6   | 36     | 48   | 20           | 48   | „                   | vi vi                 | i                 | i    | Do. do.  |
| „ 16...         | 38.0            | 38.5   | 38.5   | 36     | 40   | 12           | 44   | „                   | vi iv                 | i                 | i    | Do. do.  |
| „ 17...         | 38.1            | 38.4   | 38.5   | 36     | 44   | 12           | 44   | „                   | iv iii                | i                 | i    | Conjunctivæ less injected. Do.   |
| „ 18...         | 38.1            | 38.6   | 38.4   | 40     | 44   | 12           | 44   | „                   | iii iii               | i                 | i    | Do. do.  |
| „ 19...         | 38.1            | 38.4   | 38.5   | 36     | 40   | 12           | 52   | „                   | iii iii               | i                 | i    | Conjunctivæ clearer, discharge from nostrils continues.  |
| „ 20...         | 38.0            | 38.6   | 38.5   | 36     | 40   | 12           | 48   | „                   | iii iii               | i                 | i    | Sub-maxillary gland enlarged and hard, and small abscess on neck. Discharge from nostrils continues. |
| „ 21...         | 38.2            | 38.3   | 38.5   | 40     | 44   | 16           | 32   | „                   | iii iii               | i                 | i    | Do. do.  |
| „ 22...         | 38.3            | 38.5   | 38.5   | 36     | 44   | 16           | 36   | „                   | iii iii               | i                 | i    | Do. do.  |
| „ 23...         | 38.4            | 39.0   | 39.0   | 44     | 44   | 24           | 40   | „                   | iii ...               | i                 | i    | Do. do.  |

| Month and Date. | Temperature °C. |        |               | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine.          | Sulphate of Iron. |      | REMARKS. |   |
|-----------------|-----------------|--------|---------------|--------|------|--------------|------|---------------------|--------------------|-------------------|------|----------|---|
|                 | A.M.            | 1 P.M. | 5 P.M.        | A.M.   | P.M. | A.M.         | P.M. |                     |                    | Drachms.          |      |          |   |
| 1894.           |                 |        |               |        |      |              |      |                     | Arsenic. (Grains.) |                   |      |          |   |
|                 |                 |        |               |        |      |              |      |                     | A.M.               | P.M.              | A.M. | P.M.     |   |
| December 24..   | 38.2            | 38.8   | 39.0          | 40     | 52   | 24           | 48   | Absent.             | ...                | ...               | i    | i        | Right conjunctiva clear, left, slightly petechiated, abscess on the neck increased.       |
| „ 25...         | 38.3            | 38.6   | 39.0          | 44     | 44   | 16           | 52   | „                   | ...                | ...               | i    | i        | Do. do.   |
| „ 26...         | 38.5            | 38.6   | 39.0          | 40     | 40   | 16           | 24   | „                   | ...                | ...               | i    | i        | Right conjunctiva pale, left, yellow. The abscess on the neck burst, and some pus exuded. |
| „ 27...         | 38.7            | 39.3   | 39.3          | 40     | 40   | 12           | 28   | „                   | ...                | ...               | ...  | ...      | Conjunctivæ yellow, no petechiæ.  |
| „ 28...         | 38.6            | 39.5   | 39.8          | 36     | 40   | 12           | 20   | „                   | ...                | iii               | ...  | ...      | Right conjunctiva yellow and petechiated, left, unchanged.                                |
| „ 29...         | 39.5            | 40.1   | 40.2          | 40     | 44   | 12           | 32   | „                   | iii                | iv                | ...  | ...      | Right conjunctiva petechiated, left, clear.   |
| „ 30...         | 39.1            | 39.6   | 40.1          | 32     | 40   | 12           | 24   | „                   | v                  | v                 | ...  | ...      | Conjunctivæ clear, nostrils clean.  |
| „ 31...         | 38.7            | 39.8   | 40.3          | 34     | 48   | 12           | 20   | „                   | v                  | v                 | ...  | ...      |   |
| 1895.           |                 |        |               |        |      |              |      |                     |                    |                   |      |          |   |
| January 1...    | 39.1            | 39.5   | 39.4          | 40     | 36   | 20           | 28   | „                   | vi                 | vi                | ...  | ...      | Conjunctivæ injected, no petechiæ.  |
| „ 2...          | 38.7            | 39.6   | 39.3          | 36     | 36   | 20           | 20   | „                   | vi                 | vi                | ...  | ...      | Do. do.   |
| „ 3...          | 38.6            | 39.0   | 38.8          | 36     | 40   | 12           | 16   | „                   | vi                 | vi                | ...  | ...      | Do. do.   |
| „ 4...          | 38.3            | 38.5   | 38.5          | 36     | 36   | 16           | 16   | „                   | vi                 | vi                | ...  | ...      | Do. do.   |
| „ 5...          | 38.1            | 38.6   | 38.6          | 36     | 44   | 12           | 32   | „                   | vi                 | ...               | ...  | ...      | Conjunctivæ slightly injected, no petechiæ.   |
| „ 6...          | 38.1            | 38.3   | 38.4          | 40     | 52   | 20           | 38   | „                   | ...                | ...               | ...  | ...      | Conjunctivæ slightly injected and weakness in hind quarters.                              |
| „ 7..           | 38.4            | 39.1   | 39.0          | 36     | 48   | 16           | 32   | „                   | ...                | ...               | ...  | ...      | General condition unchanged.  |
| „ 8...          | 38.6            | 39.3   | 39.0          | 44     | 60   | 52           | 44   | „                   | ...                | ...               | ...  | ...      | Do. do.   |
| „ 9...          | 38.6            | 38.9   | 38.5          | 52     | 48   | 32           | 52   | „                   | ...                | ...               | ...  | ...      | Do. do.   |
| „ 10...         | 38.5            | 38.7   | 38.8          | 44     | 46   | 16           | 32   | „                   | ...                | ...               | ...  | ...      | Animal sweating; aloes administered.  |
| „ 11..          | 38.9            | 38.8   | 38.8          | 48     | 48   | 15           | 20   | „                   | ...                | ...               | ...  | ...      | Conjunctivæ much injected.  |
| „ 12...         | 39.0            | 39.1   | 40.0          | 42     | 48   | 48           | 64   | „                   | ...                | ...               | ...  | ...      | Do. do.   |
| „ 13...         | 39.3            | 39.4   | 39.6          | 58     | 52   | 44           | 42   | „                   | ...                | ...               | ...  | ...      | Do. do.   |
| „ 14.           | 39.5            | 39.7   | 39.0          | 72     | 80   | 21           | 48   | „                   | ...                | ...               | ...  | ...      | Do. do.   |
| „ 15..          | 41.4            | Death  | at 12-15 P.M. |        |      | 112          | ...  | „                   | ...                | ...               | ...  | ...      |   |

*Autopsy.* 15th January 1895.—The examination took place at once. The body is well nourished.

*Thorax.*—There is no fluid in the pleural cavities, or adhesions of the pleuræ.

*Lungs.*—Right presents nothing abnormal, left the seat of hypostatic congestion.

The *pericardial* sac contains a small quantity of an amber-coloured fluid.

*Heart* enlarged and weighs 6 lbs. 12 ozs. The *external surface* of the organ is free from petechiæ. *On section*, the right auricle and ventricle contain fluid blood. The inner cusp of the mitral valve presents a dark subendocardial extravasation, the size of a two-anna piece. The left auricle and ventricle are nearly empty; the latter is contracted, the columnæ carneæ are injected, mottled and a few petechiæ are dotted over their bases.

The abdominal cavity is free from fluid.

*Liver* is enlarged, weighs 17 lbs. The surface of the organ presents signs of old perihepatitis. The individual lobules are well marked, the centres being dark, while the external zone is of a light colour. *On section* a considerable quantity of blood exudes from the cut ends of the vessels.

*Spleen* weighs 3 lbs. 8 ozs., nearly twice the normal weight. There are numerous sub-capsular petechiæ. *On section* the tissues are dark in colour, but tolerably firm in consistency.

*Kidneys*—The right weighs 2 lbs. 3½ ozs; the left 2 lbs. 5¼ ozs. The capsule strips easily, but the organs are deeply congested. *On section* the pyramidal tubes are deeply injected, and the Malpighian corpuscles are deep red in colour and clearly defined.

*Stomach.*—Healthy. *Large and small intestines* present a healthy appearance.

*Bladder.*—Do.

#### HORSE No. CX.

Bay Entire Horse, Persian, age 9 years, belonging to the Bombay Mounted Police, No. 27, was purchased on the 24th September 1894, and kept in Mr. Omer Jumal's stable up to September 30th. The animal was then removed to a stable at Mount Road, Bombay, where it remained until the 24th October 1894. On the latter date it was picketted on the grounds adjoining the Police Lines from the 13th to 19th October. On the 20th October the animal was first observed to be ailing. During the above period the rations given were eight measures of ground gram and three of bran, thirty-five lbs. of green grass from the 1st to the 21st of October, when dry grass was substituted.

*November 5th, 7 A.M.*—The animal reached the Laboratory Hospital.



*State on admission.*—The animal appears to be in good condition. The ordinary symptoms of fever are present, the skin is hot and the visible mucous membranes are tinged a yellow colour and both conjunctivæ are petechiated. There is some swelling and œdema of the sheath and scrotum extending along the under-surface of the abdomen on to the front of the chest. The fetlocks and extremities have a fine appearance. Temp. A.M. 40·5°C., P. 64, R. 44. The hæmatozoa are few in the blood. Appetite good. Dung normal in appearance.

| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine                                 | REMARKS.   |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|--|--|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |  |  |
| 1894.           |                 |        |        |        |      |              |      |                     |  |  |
| November 5...   | 40·5            | 40·4   | 41·0   | 64     | 64   | 20           | 44   | Few                 | Arsenic (Grains.)<br>A.M. P.M.<br>... iv | Urticarial eruption beneath abdomen 5-15 P.M.  |
| " 6...          | 38·0            | 38·7   | 39·5   | 52     | 60   | 16           | 36   | "                   | ... iv                                   | Right conjunctiva petechiated, left, yellow and petechiated; animal dull.                        |
| " 7...          | 38·0            | 39·4   | 39·1   | 52     | 60   | 8            | 28   | "                   | iv v                                     | Conjunctivæ unchanged, hind limb swollen.  |
| " 8...          | 38·8            | 39·3   | 39·4   | 64     | 60   | 12           | 44   | "                   | i v                                      | Do. œdema beneath abdomen.   |
| " 9...          | 38·5            | 39·3   | 39·1   | 56     | 60   | 12           | 28   | Absent              | vi vi                                    | Do. swelling of hind limbs less.   |
| " 10...         | 38·4            | 39·4   | 39·1   | 52     | 56   | 12           | 20   | "                   | vi vi                                    | Animal brighter, right conjunctiva yellowish, left, dirty yellow.                                |
| " 11...         | 38·2            | 38·8   | 39·1   | 56     | 56   | 16           | 28   | "                   | ... ii                                   | Right conjunctiva injected, left, petechiated.   |
| " 12...         | 38·3            | 38·6   | 39·0   | 60     | 68   | 16           | 32   | "                   | vii vii                                  | Do. do.  |
| " 13...         | 38·3            | 39·1   | 38·7   | 48     | 56   | 8            | 28   | "                   | vii vii                                  | Do. do.  |
| " 14...         | 37·8            | 38·4   | 38·6   | 48     | 64   | 12           | 12   | "                   | vii vii                                  | Right conjunctiva slightly petechiated, left, injected.  |
| " 15...         | 38·2            | 38·4   | 38·4   | 52     | 56   | 12           | 28   | "                   | vi vi                                    | Do. do.  |
| " 16...         | 38·2            | 38·4   | 38·3   | 52     | 56   | 8            | 28   | "                   | vi vi                                    | Do. do.  |
| " 17...         | 38·1            | 38·6   | 38·4   | 56     | 56   | 12           | 20   | "                   | vi v                                     | Do. do.  |
| " 18...         | 37·7            | 38·2   | 38·3   | 56     | 68   | 8            | 36   | "                   | v v                                      |  |
| " 19...         | 38·2            | 38·4   | 38·2   | 60     | 64   | 12           | 28   | "                   | v v                                      | Conjunctivæ injected, hard swelling over ribs on right side.                                     |
| " 20...         | 37·8            | 38·4   | 38·6   | 52     | 68   | 12           | 36   | "                   | iv iv                                    | Right conjunctiva petechiated, left, injected; several small swellings on neck and abdomen.      |
| " 21...         | 38·1            | 38·5   | 38·5   | 60     | 72   | 8            | 32   | "                   | iv iv                                    | Conjunctivæ injected, swelling on right side disappeared.  |
| " 22...         | 38·2            | 38·7   | 39·1   | 64     | 76   | 12           | 44   | "                   | iv iv                                    | Both conjunctivæ almost clear.   |
| " 23...         | 38·4            | 38·6   | 39·1   | 64     | 64   | 12           | 24   | "                   | v v                                      | Do. do.  |
| " 24...         | 38·2            | 39·0   | 38·8   | 60     | 68   | 8            | 16   | "                   | v v                                      | Do. do.  |
| " 25...         | 38·2            | 38·5   | 38·8   | 60     | 72   | 10           | 28   | "                   | v v                                      | Conjunctivæ injected.  |
| " 26...         | 38·8            | 38·7   | 38·8   | 72     | 80   | 24           | 36   | "                   | v v                                      | Right conjunctiva petechiated, left, clear.  |
| " 27...         | 38·6            | 38·8   | 39·3   | 68     | 80   | 20           | 24   | "                   | v v                                      | Do. left, injected.  |
| " 28...         | 38·5            | 39·3   | 39·3   | 60     | 80   | 16           | 40   | "                   | v v                                      | Conjunctivæ injected.  |
| " 29...         | 38·5            | 38·5   | 38·8   | 64     | 72   | 20           | 24   | "                   | ... v                                    | Do.  |
| " 30...         | 38·6            | 38·7   | 39·1   | 64     | 80   | 16           | 32   | "                   | v v                                      | Do.  |
| December 1...   | 38·7            | 39·3   | 39·7   | 68     | 72   | 16           | 28   | "                   | v v                                      | Do.  |
| " 2...          | 38·8            | 39·3   | 39·5   | 68     | 76   | 24           | 32   | "                   | ... v                                    | Do.  |
| " 3...          | 38·7            | 39·5   | 39·2   | 52     | 60   | 12           | 28   | "                   | v v                                      | Do.  |
| " 4...          | 38·3            | 38·4   | 38·3   | 52     | 56   | 28           | 48   | "                   | v v                                      | Do.  |
| " 5...          | 38·0            | 38·3   | 38·2   | 56     | 60   | 16           | 44   | "                   | v ...                                    | Do.  |
| " 6...          | 38·1            | 38·2   | 38·0   | 76     | 56   | 28           | 16   | "                   | ... ...                                  | Right conjunctiva large extravasations, left, free, membranes injected; animal losing flesh.     |
| " 7...          | 38·0            | 38·1   | 38·4   | 52     | 56   | 12           | 24   | "                   | ... iii                                  | Conjunctivæ deeply injected; right, large extravasations. Animal is very dull, losing flesh.     |
| " 8...          | 38·3            | 38·1   | 38·4   | 52     | 52   | 32           | 28   | "                   | iii iii                                  | Conjunctivæ deeply injected; right, large extravasations—animal's shoes removed and hoofs pared. |
| " 9...          | 38·2            | 38·3   | 38·5   | 52     | 56   | 20           | 24   | "                   | iii iv                                   | Conjunctivæ injected; right, one extravasation; some lacrymation.                                |
| " 10...         | 38·1            | 38·5   | 39·1   | 48     | 56   | 8            | 24   | "                   | iv iv                                    | Do. do.  |
| " 11...         | 38·6            | 38·9   | 38·9   | 56     | 64   | 16           | 24   | "                   | iv iv                                    | Do. do.  |
| " 12...         | 38·6            | 39·0   | 39·1   | 52     | 48   | 8            | 12   | "                   | iv ...                                   | Do. do.  |
| " 13...         | 38·5            | 38·5   | 38·8   | 56     | 52   | 12           | 8    | "                   | Sulphate of Iron (drachm.)<br>... i      | Right conjunctiva pale, left, much injected.   |
| " 14...         | 38·5            | 39·0   | 39·0   | 52     | 44   | 12           | 8    | "                   | i i                                      | Do. do.  |
| " 15...         | 38·5            | 38·9   | 38·6   | 52     | 52   | 12           | 12   | "                   | i ...                                    | Animal dull, lying down. Paralysis of lips.  |
| " 16...         | 38·3            | 38·6   | 38·5   | 48     | 60   | 20           | 16   | "                   | ... ...                                  | Right conjunctiva yellow, left, petechiated; milk, 4 lbs. given.                                 |
| " 17...         | 38·5            | 38·6   | 39·0   | 60     | 56   | 12           | 12   | "                   | ... ...                                  | Right conjunctiva yellow, left, petechiated; milk, 3 lbs. given A.M.                             |

| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine.                      | REMARKS.   |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|--------------------------------|--|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |                                |  |
| 1894.           |                 |        |        |        |      |              |      |                     |                                |  |
| December 18.    | 38.5            | 38.6   | 39.3   | 48     | 60   | 8            | 12   | Absent.             | Arsenic (grains.)<br>A.M. P.M. | Right conjunctiva yellow, left, petechiated. Milk, mutton broth, and crushed linseed given.<br>Right conjunctiva petechiated, left injected abdominal pains, opium administered. Milk and broth every two hours.<br>Condition unchanged. |
| „ 19...         | 38.3            | 38.8   | 39.4   | 56     | 64   | 12           | 18   | „                   | Liq. opii. sed.<br>½ oz. 1 oz. |  |
| „ 20...         | 38.5            | 39.3   | 39.4   | 76     | 100  | 28           | 44   | „                   | .....                          |  |
| „ 21...         | 40.0            | ...    | ...    | 120    | ...  | 60           | ...  | „                   | .....                          |  |

December 21st, 1894.—Autopsy took place at once.

Body well nourished.

*Thorax*.—There is no fluid in the pleural cavities, but adhesions, the result of an old pleurisy, are present.

*Lungs*.—Right healthy, left, the seat of hypostatic congestion. There are about two drachms of fluid in the pericardial sac.

*Heart* weighs 4 lbs. 8 ozs. The external surface presents numerous small pericardial ecchymoses, especially bordering on and in the interventricular sulci. *On section* the cavities present a healthy appearance. The valves are stained an orange colour.

The abdominal cavity is free from fluid.

*Liver* weighs 11 lbs. 3 ozs. It shows signs of old perihepatitis but no calcareous nodules on the surface. *On section* the tissues present a healthy appearance.

*Spleen* weighs 2 lbs. 4½ ozs. Normal in appearance.

*Kidneys*.—The right weighs 1 lb. 3¼ ozs.; the left 1 lb. 4¼ ozs. Externally the organs are mottled dark red and yellow, and *on section*, the Malpighian corpuscles are seen to stand out and to be of a dark red hue.

*Stomach* healthy. *Large and small intestines* ditto.

*Bladder*.—Ditto.

#### HORSE No. CXI.

Bay Entire Horse, from the Persian Gulf, No. 100, belonging to the Bombay Mounted Police, was stationed at Dadar from the 16th to the 23rd June 1894. It was then taken to the Bombay Veterinary College and remained in hospital “for sore on neck” from 28th July to the 7th August, was then removed to Māhim from the 23rd to the 30th of September; during the intervening periods the animal was in the Police Lines at Byculla. On the 17th October, the date on which it was observed to be ailing, it was at the latter station, but was sent at once to the Veterinary College, Parel.

During the above period the rations given were—

Eight measures of ground gram and three of beans.

One measure of “Mung Dall” (boiled) given in lieu of ground gram from 27th August to 28th October 1894.

10 lbs. of green grass and 10 lbs. dry grass from 1st September to 15th September.

16 lbs. of „ and 8 lbs. „ 16th September to 30th September.

35 lbs. of „ from 1st to the 21st October.

Previous and subsequent to the above-mentioned periods, 15lbs. of dry grass was given.

November 5th, 1894, 7 A.M.—The animal arrived at the Laboratory Hospital, Poona.

*State on admission*.—The animal presents a bright appearance and is in good condition. The skin is cool, but the visible mucous membranes present a faintly yellow appearance. There are no petechiæ on the conjunctivæ. The extremities are fine, but there is a certain amount of semi-solid œdema beneath the skin on the front of the chest Temp. 38.2°C., P. 48, R. 24. The hæmatozoon is absent from the blood. Appetite good. Dung healthy in appearance.

| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine Arsenic (grains). |      | REMARKS.   |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------------------------|------|--|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | A.M.                       | P.M. |  |
| 1894.           |                 |        |        |        |      |              |      |                     |                            |      |  |
| November 5...   | 38.2            | 39.7   | 40.7   | 48     | 60   | 24           | 56   | Absent.             | ... iv                     |      | Conjunctivæ pale yellow, slight œdema beneath chest.     |
| „ 6...          | 38.2            | 38.7   | 38.5   | 48     | 52   | 12           | 28   | „                   | iv iv                      |      | Conjunctivæ clear.                                       |
| „ 7...          | 38.4            | 39.3   | 39.1   | 48     | 52   | 16           | 48   | Few ...             | iv v                       |      | Do.  |
| „ 8...          | 39.4            | 39.6   | 39.6   | 48     | 56   | 16           | 40   | „ ...               | v v                        |      | General urticarial eruption, disappeared in the evening. |
| „ 9...          | 38.1            | 39.2   | 38.6   | 48     | 44   | 12           | 20   | „ ...               | vi vi                      |      | Conjunctivæ clear.                                       |
| „ 10...         | 38.0            | 38.8   | 38.5   | 48     | 44   | 16           | 32   | Absent.             | vi vi                      |      | Do. urticarial eruption on right side.                   |
| „ 11...         | 37.8            | 39.0   | 38.7   | 48     | 48   | 12           | 36   | „                   | ii iv                      |      | Do. do.  |



| Month and Date | Temperature °C. |        |        | Pulse.   |      | Respiration. |      | Hæmatozoa<br>in Blood. | Medicine<br>Arsenic<br>(grains.) |      | REMARKS.  |
|----------------|-----------------|--------|--------|----------|------|--------------|------|------------------------|----------------------------------|------|---|
|                | A.M.            | 1 P.M. | 5 P.M. | A.M.     | P.M. | A.M.         | P.M. |                        | A.M.                             | P.M. |   |
| 1894.          |                 |        |        |          |      |              |      |                        |                                  |      |   |
| November 12.   | 37.6            | 38.2   | 38.4   | 44       | 48   | 12           | 16   | Absent.                | vii                              | vii  | Conjunctivæ clear. Urticarial eruption on right side.                                 |
| " 13...        | 37.7            | 38.4   | 38.5   | 40       | 44   | 8            | 16   | "                      | vii                              | vii  | Conjunctivæ slightly injected.  |
| " 14...        | 38.0            | 38.3   | 38.5   | 48       | 48   | 16           | 12   | "                      | vii                              | vii  | Do. do.   |
| " 15...        | 37.5            | 37.8   | 38.2   | 44       | 56   | 16           | 12   | "                      | vi                               | vi   | Do. do.   |
| " 16...        | 37.8            | 37.8   | 38.3   | 40       | 48   | 12           | 32   | "                      | vi                               | vi   | Do. do.   |
| " 17...        | 37.4            | 37.7   | 38.3   | 44       | 52   | 12           | 28   | "                      | vi                               | v    | Right conjunctiva injected, left, clear.  |
| " 18...        | 37.6            | 38.0   | 38.5   | 44       | 44   | 12           | 28   | "                      | v                                | v    | Conjunctivæ clearer.  |
| " 19...        | 37.8            | 38.3   | 38.4   | 44       | 52   | 20           | 36   | "                      | v                                | v    | Do. injected.   |
| " 20...        | 37.6            | 38.1   | 38.3   | 40       | 48   | 12           | 44   | "                      | iv                               | iv   | Do. clear.  |
| " 21...        | 37.7            | 38.0   | 38.2   | 40       | 44   | 12           | 24   | "                      | iv                               | iv   | Do.   |
| " 22...        | 38.4            | 38.1   | 38.2   | 48       | 48   | 16           | 20   | "                      | iv                               | iv   | Do. Corn refused.   |
| " 23...        | 37.6            | 37.6   | 38.2   | 40       | 40   | 8            | 16   | "                      | v                                | v    | Do.   |
| " 24...        | 37.8            | 38.0   | 38.3   | 44       | 48   | 12           | 20   | "                      | v                                | ...  | Do.   |
| " 25...        | 37.7            | 38.0   | 38.4   | 44       | 40   | 12           | 16   | "                      | v                                | ...  | Do.   |
| " 26...        | 38.1            | 38.2   | 38.3   | 40       | 44   | 16           | 16   | "                      | ...                              | v    | Do.   |
| " 27...        | 38.1            | 38.1   | 38.2   | 40       | 44   | 24           | 20   | "                      | ...                              | ...  | Do.   |
| " 28...        | 37.7            | 38.4   | 38.5   | 40       | 48   | 16           | 32   | "                      | ...                              | v    | Do. Animal bright.  |
| " 29...        | 37.8            | 38.1   | 38.6   | 48       | 48   | 12           | 24   | "                      | ...                              | v    | Condition unchanged.  |
| " 30...        | 38.2            | 38.3   | 38.4   | 44       | 54   | 16           | 24   | "                      | v                                | v    | Do.   |
| December 1...  | 38.2            | 38.4   | 38.5   | 44       | 48   | 12           | 24   | "                      | v                                | v    | Do.   |
| " 2...         | 39.1            | 38.3   | 38.3   | 40       | 44   | 24           | 32   | "                      | ...                              | v    | Do.   |
| " 3...         | 38.3            | 38.5   | 38.6   | 48       | 48   | 12           | 40   | "                      | ...                              | v    | Do.   |
| " 4...         | 38.5            | 38.3   | 38.4   | 40       | 36   | 20           | 12   | "                      | v                                | v    | Do.   |
| " 5...         | 38.1            | 38.4   | 39.0   | 40       | 44   | 12           | 28   | "                      | v                                | v    | Do.   |
| " 6...         | 38.5            | 38.7   | 39.0   | 40       | 44   | 12           | 36   | "                      | v                                | v    | Conjunctival membranes somewhat injected, no petechiæ.                                |
| " 7...         | 38.5            | 39.1   | 38.8   | 40       | 44   | 16           | 16   | "                      | ...                              | v    | Do. do. do.   |
| " 8...         | 39.4            | 39.6   | 40.0   | 40       | 40   | 12           | 24   | Few ...                | ...                              | vii  | Do. do. do.   |
| " 9...         | 39.7            | 38.4   | 38.2   | 44       | 40   | 32           | 24   | Absent.                | vii                              | vii  | Do. do. somewhat granular and yellow. Do.   |
| " 10...        | 38.0            | 38.2   | 38.6   | 40       | 40   | 12           | 16   | "                      | iii                              | vii  | Slight eruption on under-surface of abdomen, conjunctivæ injected; some lachrymation. |
| " 11...        | 38.1            | 38.2   | 38.4   | 44       | 40   | 28           | 28   | "                      | vii                              | vii  | The eruption has disappeared.   |
| " 12...        | 38.1            | 38.0   | 38.2   | 36       | 44   | 12           | 28   | "                      | vii                              | vii  | Condition unchanged.  |
| " 13...        | 37.8            | 37.8   | 38.3   | 40       | 44   | 12           | 16   | "                      | vii                              | vii  | Right conjunctiva slightly injected, left, much injected.                             |
| " 14...        | 37.7            | 38.1   | 38.4   | 40       | 44   | 12           | 20   | "                      | vii                              | vii  | Do. do.   |
| " 15...        | 38.1            | 38.1   | 38.8   | 40       | 44   | 12           | 32   | "                      | vii                              | vii  | Conjunctivæ clearer.  |
| " 16...        | 38.2            | 38.3   | 38.4   | 36       | 44   | 12           | 12   | "                      | vii                              | vii  | Do.   |
| " 17...        | 38.2            | 38.2   | 38.4   | 44       | 44   | 12           | 24   | "                      | vii                              | ...  | Do. Slight discharge from both eyes.  |
| " 18...        | 37.7            | 38.5   | 38.4   | 44       | 48   | 12           | 28   | "                      | ...                              | iii  | Conjunctivæ clear, discharge continues.   |
| " 19...        | 38.1            | 38.4   | 38.7   | 44       | 44   | 12           | 28   | "                      | iii                              | iii  | Do. do.   |
| " 20...        | 38.3            | 38.7   | 38.6   | 48       | 52   | 16           | 32   | "                      | iii                              | iii  | Do. do.   |
| " 21...        | 38.3            | 38.4   | 38.4   | 44       | 44   | 24           | 24   | "                      | iii                              | iii  | Do. do.   |
| " 22...        | 38.3            | 38.5   | 38.4   | 44       | 48   | 16           | 20   | "                      | iii                              | iii  | Conjunctivæ slightly injected.  |
| " 23...        | 38.5            | 38.5   | 38.3   | 44       | 36   | 24           | 32   | "                      | ...                              | ...  | Loss of power in hind quarters. Animal put in slings.                                 |
| " 24...        | 38.3            | 39.2   | 38.0   | 44       | 72   | 20           | 52   | "                      | ...                              | ...  | Conjunctivæ clear, animal down, in profuse perspiration.                              |
| " 25...        | 38.7            | 39.3   | 39.6   | 68       | 88   | 32           | 52   | "                      | ...                              | ...  | Paralysis of back, left conjunctiva petechiated.                                      |
| " 26...        | 38.5            | 39.2   | 40.0   | 96       | 108  | 28           | 40   | "                      | ...                              | ...  | Conjunctivæ petechiated.  |
|                |                 |        |        | Death at | 2    | A.M.         |      |                        |                                  |      |   |

26th December 1894.—The animal died at 2 A.M.

Autopsy.—At 10.30 A.M., eight and half hours *post mortem*.

The body is well nourished. There is no fluid in the pleural cavities and no adhesions of the pleuræ.

Lungs.—The apices are the seat of a slight emphysema, otherwise healthy.

The pericardium contains a small quantity of an orange-coloured fluid.

Heart weighs 4 lbs. 11 ozs.. The external surface presents a dotted appearance owing to the presence of numerous dark-coloured sub-pericardial petechiæ. On section, the right auricle and ventricle present a healthy appearance, the left ventricle contains one extravasation, dark in colour, lying beneath one of the curtains of the auriculo-ventricular valve.

The abdominal cavity is free from fluid.

*Liver* weighs 13 lbs. 3½ ozs. There are numerous calcareous nodules dotted about on the anterior and posterior surfaces of the organ, numerous lymphatic vessels are mapped out on the convex surface, and there are signs of old perihepatitis present. *On Section* the tissues are of a deep red colour, and a few yellowish coloured nodules are dotted over the cut surfaces.

*Stomach*.—The *cuticular* portion is pale, the *villous* considerably congested, and at the junction of the two there is a thin line of ulceration.

*Spleen* weighs 1 lb. 6¾ ozs. The convex surface is dotted over with spots of a brick red colour, while on the concave there are enlarged lymphatic vessels, which contain a clear, transparent fluid. *On section* the tissues are dark in colour, but firm.

*Kidneys*.—The right weighs 1 lb. 11 ozs., the left 1 lb. 8¾ ozs. The external surfaces of the organs are dotted over with dark-coloured petechiæ, the size of a small pin's head. *On section* the tissues are dark in colour and the vessels injected.

*Small intestines*.—There is a superficial ulceration on the surface of the mucous membrane, extending down the gut from the pyloric orifice for six inches, and there are small patches of congestion dotted over the mucous membrane throughout its whole length.

The *Colon* is yellow in colour, and also presents patches of congestion.

*Bladder* is distended with orange-coloured urine, and there are some slight ecchymoses round the neck of the organ.

### HORSE No. CXII.

Grey Persian gelding, aged 13 years, No. 61, was purchased by the Bombay Tramway Company on the 26th November 1887. The animal was admitted to the Infirmary on the 31st October, but the Surra organism was not discovered in the blood until the 7th November.

November 9th, 2 P.M.—The animal arrived at the Laboratory Hospital, Poona.

*State on admission*.—The animal appeared to be very much fatigued after the journey, and is only in fair condition. The visible mucous membranes are tinged an orange colour and the conjunctivæ are petechiated. The skin is somewhat hot. Temp. 2 P.M. 39·3° C. The pulse is accelerated but feeble, 48 per minute. Respirations 28. There is swelling and œdema of the scrotum and under-surface of the abdomen. There is also some œdema of the fetlocks, but they are cool to the touch, and are not tender on manipulation. The hæmatozoa are very numerous in the blood. The appetite is poor and the animal refuses his ration of corn. The dung is normal in appearance. Temp. 5 P.M. 38·3° C. P. 40, R. 24.

| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine.         |      |                   |      | REMARKS.  |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|-------------------|------|-------------------|------|---|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | Sulphate of Iron. |      | Arsenic (Grains). |      |   |
|                 |                 |        |        |        |      |              |      |                     | A.M.              | P.M. | A.M.              | P.M. |   |
| 1894.           |                 |        |        |        |      |              |      |                     | A.M.              | P.M. | A.M.              | P.M. |   |
| November 9...   | ...             | 39·3   | 38·3   | ...    | 40   | ...          | 24   | Very numerous.      |                   |      | ...               | iv   | Conjunctivæ orange and petechi-ated; œdema beneath abdomen. |
| „ 10...         | 37·7            | 39·4   | 40·0   | 44     | 48   | 12           | 24   | Numerous.           |                   |      | iv                | v    | Conjunctivæ orange; shivering fits; hind fetlocks swollen.  |
| „ 11...         | 37·7            | 38·0   | 38·4   | 40     | 44   | 16           | 28   | Few.                |                   |      | v                 | vi   | Conjunctivæ clearer; œdema beneath abdomen disappeared.     |
| „ 12...         | 37·5            | 38·2   | 39·0   | 36     | 48   | 12           | 16   | Absent.             |                   |      | vi                | vi   | Do. Corn refused.   |
| „ 13...         | 38·0            | 38·5   | 38·6   | 48     | 48   | 10           | 16   | „                   |                   |      | vi                | vi   | Conjunctivæ yellow, no petechiæ.                            |
| „ 14...         | 37·7            | 38·2   | 38·2   | 44     | 48   | 8            | 8    | „                   |                   |      | vi                | vi   | Do. do.   |
| „ 15...         | 37·8            | 38·1   | 38·2   | 48     | 44   | 12           | 12   | „                   |                   |      | vii               | vii  | Do. do.   |
| „ 16...         | 37·7            | 37·8   | 38·6   | 44     | 44   | 10           | 16   | „                   |                   |      | vii               | vii  | Conjunctivæ slightly injected.                              |
| „ 17...         | 37·7            | 38·0   | 38·4   | 40     | 52   | 12           | 12   | „                   |                   |      | vii               | vii  | Do. do.   |
| „ 18...         | 37·7            | 38·2   | 38·2   | 44     | 52   | 12           | 12   | „                   |                   |      | vi                | vi   | Do. Hind limbs slightly swollen.                            |
| „ 19...         | 38·0            | 38·4   | 38·5   | 48     | 48   | 12           | 16   | „                   |                   |      | vi                | vi   | Do. do.   |
| „ 20...         | 37·8            | 38·2   | 38·4   | 44     | 48   | 8            | 12   | „                   |                   |      | vi                | v    | Do. do.   |
| „ 21...         | 37·8            | 38·2   | 38·4   | 52     | 56   | 12           | 24   | „                   |                   |      | v                 | v    | Do. do. Corn refused.                                       |
| „ 22...         | 37·4            | 38·1   | 38·5   | 56     | 60   | 12           | 12   | „                   |                   |      | ...               | v    | Do. do.   |
| „ 23...         | 37·0            | 38·0   | 38·3   | 60     | 64   | 12           | 12   | „                   |                   |      | ...               | iv   | Do. do.   |
| „ 24...         | 37·6            | 37·8   | 38·3   | 52     | 60   | 8            | 12   | „                   |                   |      | ...               | iv   | Conjunctivæ yellow, vessels injected, sheath swollen.       |
| „ 25...         | 37·6            | 37·8   | 38·2   | 52     | 52   | 8            | 12   | „                   |                   |      | iv                | v    | Conjunctivæ clearer, do.                                    |
| „ 26...         | 38·1            | 38·3   | 38·0   | 52     | 48   | 8            | 12   | „                   |                   |      | ...               | v    | Do. do.   |
| „ 27...         | 37·7            | 38·0   | 38·2   | 48     | 52   | 16           | 12   | „                   |                   |      | v                 | ...  | Conjæ. slightly yellow do.                                  |
| „ 28...         | 37·8            | 37·8   | 38·1   | 56     | 52   | 8            | 8    | „                   |                   |      | v                 | v    | Conjæ. slightly injected do.                                |
| „ 29...         | 37·7            | 38·1   | 38·4   | 52     | 56   | 8            | 12   | „                   |                   |      | v                 | v    | Do. do.   |
| „ 30...         | 37·6            | 37·8   | 38·3   | 44     | 56   | 8            | 16   | „                   |                   |      | v                 | v    | Do. do.   |



| Month and Date. | Temperature °C. |        |        | Pulse.   |      | Respiration. |      | Hæmatozoa<br>in Blood. | Medicine.                        |      |                      |      | REMARKS.  |
|-----------------|-----------------|--------|--------|----------|------|--------------|------|------------------------|----------------------------------|------|----------------------|------|---|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.     | P.M. | A.M.         | P.M. |                        | Sulphate<br>of Iron<br>(Drachm). |      | Arsenic<br>(Grains). |      |   |
|                 |                 |        |        |          |      |              |      |                        | A.M.                             | P.M. | A.M.                 | P.M. |   |
| 1894.           |                 |        |        |          |      |              |      |                        |                                  |      |                      |      |   |
| December 1...   | 37.8            | 38.1   | 38.2   | 52       | 52   | 8            | 12   | Absent.                |                                  |      | v                    | v    | Conjunctivæ slightly injected.<br>Edema of hind limbs.                |
| " 2...          | 37.7            | 38.2   | 38.6   | 48       | 56   | 8            | 12   | "                      |                                  |      | ...                  | v    | Condition unchanged.  |
| " 3...          | 38.0            | 38.3   | 38.4   | 48       | 56   | 8            | 12   | "                      | ...                              | i    | ...                  | v    | Do.   |
| " 4...          | 38.0            | 37.8   | 38.3   | 48       | 52   | 12           | 12   | "                      | i                                | i    | ...                  | ii   | Edema disappearing.   |
| " 5...          | 37.4            | 37.8   | 38.7   | 44       | 52   | 8            | 20   | "                      | i                                | i    | v                    | v    |   |
| " 6...          | 37.7            | 38.1   | 38.2   | 44       | 44   | 8            | 12   | "                      | i                                | i    | v                    | v    | Right conjunctiva pale, clear,<br>left, orange, no petechiæ.          |
| " 7...          | 37.1            | 37.4   | 38.5   | 40       | 44   | 8            | 12   | "                      | i                                | ...  | v                    | vi   | Right conjunctiva pale, clear, left,<br>orange; refused part of corn. |
| " 8...          | 37.7            | 37.8   | 38.6   | 40       | 48   | 12           | 20   | "                      | ...                              | i    | vi                   | vi   | Do. do.   |
| " 9...          | 38.0            | 38.0   | 38.3   | 40       | 44   | 12           | 12   | "                      | i                                | ...  | vi                   | ...  | Conjunctivæ injected, no petechiæ.                                    |
| " 10...         | 37.3            | 37.8   | 38.6   | 48       | 44   | 12           | 12   | "                      | ...                              | ...  | vi                   | ...  | Do. do.   |
| " 11...         | 38.1            | 38.1   | 38.4   | 44       | 40   | 12           | 12   | "                      |                                  |      | vi                   | vi   | Condition unchanged.  |
| " 12...         | 37.8            | 38.2   | 38.2   | 40       | 52   | 12           | 16   | "                      |                                  |      | ...                  | vi   | Do.   |
| " 13...         | 37.7            | 37.8   | 38.5   | 48       | 60   | 8            | 12   | "                      |                                  |      | ...                  | vi   | Conjunctivæ injected; hind<br>fetlocks swollen.                       |
| " 14...         | 37.6            | 37.7   | 38.2   | 52       | 68   | 12           | 18   | "                      |                                  |      | ...                  | vi   | Do. do.   |
| " 15...         | 37.8            | 38.1   | 38.7   | 52       | 64   | 8            | 8    | "                      |                                  |      | vi                   | vi   | Do. do.   |
| " 16...         | 37.5            | 37.7   | 38.8   | 56       | 72   | 8            | 20   | "                      |                                  |      | ...                  | vi   | Conjunctivæ highly injected.  |
| " 17...         | 37.7            | 37.8   | 38.6   | 60       | 68   | 12           | 28   | "                      |                                  |      | vi                   | vi   | Do. do.   |
| " 18...         | 37.4            | 38.1   | 38.5   | 56       | 64   | 12           | 16   | "                      |                                  |      | vi                   | vi   | Do. do.   |
| " 19...         | 37.4            | 37.7   | 38.8   | 52       | 72   | 8            | 16   | "                      |                                  |      | vi                   | vi   | Conjunctivæ less injected.  |
| " 20...         | 37.4            | 38.0   | 38.8   | 52       | 64   | 8            | 12   | "                      |                                  |      | vi                   | vi   | Do. Slight cough.   |
| " 21...         | 39.3            | 40.2   | 40.5   | 68       | 88   | 8            | 32   | "                      |                                  |      | vi                   | vi   | Do. Lymphangitis<br>left hind leg, and swellings on<br>right fore.    |
| " 22...         | 39.0            | 39.5   | 39.6   | 72       | 72   | 12           | 32   | "                      |                                  |      | vi                   | vi   | Conjæ. orange and injected do.  |
| " 23...         | 38.4            | 39.0   | 39.6   | 60       | 72   | 12           | 44   | "                      |                                  |      | vi                   | vi   | Do. do. do.   |
| " 24...         | 38.1            | 38.4   | 38.7   | 56       | 72   | 8            | 12   | "                      |                                  |      | vi                   | vi   | Do. do. do.   |
| " 25...         | 37.7            | 37.7   | 38.4   | 72       | 76   | 8            | 40   | "                      |                                  |      | vi                   | iv   | Do. do. and<br>petechiated; swelling on right<br>fore.                |
| " 26...         | 37.7            | 37.7   | 38.3   | 64       | 76   | 8            | 20   | "                      |                                  |      | iv                   | iv   | Conjunctivæ unchanged,<br>animal losing flesh do.                     |
| " 27...         | 38.0            | 37.8   | 38.5   | 72       | 56   | 8            | 12   | "                      |                                  |      | iv                   | iv   | Do. do. do.   |
| " 28...         | 38.3            | 37.7   | 39.0   | 68       | 68   | 8            | 16   | "                      |                                  |      | iv                   | iv   | Do. do. do.   |
| " 29...         | 38.1            | 38.0   | 39.3   | 72       | 80   | 8            | 16   | "                      |                                  |      | iv                   | iv   | Left conjunctiva petechiated.   |
| " 30...         | 38.0            | 38.3   | 39.0   | 68       | 76   | 8            | 12   | "                      |                                  |      | iv                   | iv   | Do. do.   |
| " 31...         | 38.2            | 38.4   | 39.6   | 68       | 76   | 8            | 32   | "                      |                                  |      | iv                   | iv   | Do. do.   |
| 1895.           |                 |        |        |          |      |              |      |                        |                                  |      |                      |      |   |
| January 1...    | 37.8            | 38.4   | 39.4   | 64       | 72   | 8            | 16   | "                      |                                  |      | iv                   | iv   | Conjunctivæ orange and<br>petechiated.                                |
| " 2...          | 38.0            | 38.3   | 38.8   | 60       | 68   | 12           | 16   | "                      |                                  |      | iv                   | ...  | Do. do.   |
| " 3...          | 37.7            | 37.7   | 38.6   | 54       | 64   | 8            | 12   | "                      |                                  |      | ...                  | ...  | Do. do.   |
| " 4...          | 37.5            | 37.8   | 38.4   | 48       | 60   | 8            | 12   | "                      |                                  |      | iv                   | iv   | Do. do.   |
| " 5...          | 37.7            | 37.7   | 38.3   | 44       | 48   | 8            | 8    | "                      |                                  |      | iv                   | iv   | Do. do.   |
| " 6...          | 38.2            | 38.3   | 39.1   | 44       | 76   | 8            | 16   | "                      |                                  |      | iv                   | iv   | Right conjunctiva yellow and<br>petechiated, left, unchanged.         |
| " 7...          | 37.7            | 38.6   | 38.6   | 52       | 48   | 8            | 20   | "                      |                                  |      | iv                   | iv   | Do. do.   |
| " 8...          | 38.1            | 38.3   | 38.2   | 44       | 40   | 8            | 16   | "                      |                                  |      | iv                   | iv   | Do. do.   |
| " 9...          | 38.1            | 37.8   | 38.2   | 48       | 40   | 16           | 12   | "                      |                                  |      | iv                   | iv   | Right conjunctiva orange, left,<br>minute petechiæ.                   |
| " 10...         | 37.8            | 38.1   | 38.5   | 40       | ...  | 8            | ...  | "                      |                                  |      | iv                   | iv   | Do. do.   |
| " 11...         | 37.9            | 38.2   | 38.4   | 36       | 40   | 8            | 9    | "                      |                                  |      | iv                   | ...  | Conjæ. orange and petechiated,<br>œdema of hind limbs continues.      |
| " 12...         | 38.1            | 38.3   | 39.4   | 34       | 60   | 8            | 20   | "                      |                                  |      | ...                  | ...  | Conjunctivæ orange, with large<br>extravasations.                     |
| " 13...         | 38.2            | 38.6   | 39.2   | 42       | 51   | 12           | 24   | "                      |                                  |      | ...                  | ...  | Do. do.   |
| " 14...         | 38.5            | 38.3   | 38.7   | 42       | 48   | 10           | 16   | "                      |                                  |      | ...                  | ...  | Conjæ. yellow and petechiated.  |
| " 15...         | 38.0            | 38.2   | 39.2   | 48       | 45   | 8            | 15   | "                      |                                  |      | ...                  | ...  | Do. do.   |
| " 16...         | 38.3            | 38.7   | 39.8   | 40       | 52   | 12           | 16   | "                      |                                  |      | ...                  | ...  | Do. do.   |
| " 17...         | 38.3            | 39.3   | 40.1   | 40       | 48   | 12           | 20   | "                      |                                  |      | ...                  | ...  | Do. do.   |
| " 18...         | 39.2            | 39.5   | 40.7   | 48       | 60   | 12           | 20   | "                      |                                  |      | ...                  | ...  | Do. do.   |
| " 19...         | 40.3            | 40.3   | 40.7   | 52       | 60   | 8            | 16   | "                      |                                  |      | ...                  | ...  | Do. do. hind<br>limbs less swollen.                                   |
| " 20...         | 39.8            | 40.3   | 40.5   | 56       | 60   | 12           | 12   | "                      |                                  |      | ...                  | ...  | Right conjunctiva yellow, left,<br>orange and petechiated.            |
| " 21...         | 40.5            | 40.5   | 40.3   | 60       | 68   | 12           | 16   | "                      |                                  |      | ...                  | ...  | Do. do.   |
| " 22...         | 39.8            | 39.7   | 40.0   | 80       | 60   | 16           | 12   | "                      |                                  |      | ...                  | ...  | Do. do.   |
| " 23...         | 39.6            | 39.6   | 40.0   | 56       | 64   | 12           | 12   | "                      |                                  |      | ...                  | ...  | Do. do.   |
|                 |                 |        |        | Death at | 8-15 | P.M.         |      |                        |                                  |      |                      |      |   |

23rd January 1895.—Autopsy twelve hours post mortem.

Body emaciated. (Edema and swelling of the extremities, especially of the near hind, due to Lymphangitis,

*Thorax*.—There is no fluid in the pleural cavities, and no adhesions of the pleuræ.

*Lungs*.—The apices are the seat of a circumscribed emphysema. They are otherwise healthy.

The pericardial sac contains an ounce of an orange-coloured fluid.

*Heart* weighs 5 lbs. 3 ozs. There is a complete absence of extravasations both externally and internally. The valves are healthy.

The *abdominal cavity* is free from fluid.

*Liver* weighs 7 lbs. 4½ ozs. and is somewhat small. There are signs of old perihepatitis and a few small calcareous nodules are dotted over both surfaces. *On section*, the tissues are firm and appear healthy.

*Spleen* weighs 1 lb. 14 ozs. and the tissues are firm and healthy on section.

*Kidneys*.—The right weighs 1 lb. 5 ozs.; the left 1 lb. 4 ozs. The capsule strips easily, and *on section* the tissues appear normal.

*Stomach*.—Small,—*cuticular* and *villous* portions present a healthy appearance.

*Large and small intestines*—Healthy.

*Bladder*.—Ditto.

### HORSE No. CXIII.

Grey Entire Horse from Persian Gulf, belonging to the Bombay Mounted Police, No. 41, was purchased on 2nd June 1894.

The animal was kept from the 2nd June to 27th November 1894 in the following places:—

Oomer Jumal's Stables, 2nd June to 9th June.

Pallonjee's Hotel Stables, 10th June to 9th September.

Byculla Police Lines, 10th September to 2nd November.

Parel Veterinary Hospital, 3rd November to 27th November.

November 28th.—The horse arrived at the Laboratory Hospital, Poona.

*State on admission*.—Animal in fair condition. It is suffering from the ordinary symptoms of fever. The skin is somewhat hot, and the visible mucous membranes are slightly injected, but there are no extravasations of blood on the conjunctivæ. There is slight œdema about the fetlocks. Temperature A.M. 39.5°C. Pulse 48. Respirations 24. There are no hæmatozoa in the blood. Temp. 1 P.M. 39.6°C. The appetite is poor. The fæces are normal in appearance.

| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine Arsenic (Grains.) |      | REMARKS.  |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------------------------|------|---|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | A.M.                       | P.M. |   |
| 1894.           |                 |        |        |        |      |              |      |                     |                            |      |   |
| Nov. 29...      | 39.5            | 39.6   | 40.2   | 48     | 52   | 24           | 32   | Few                 | ...                        | iv   | Conjunctivæ yellow, no petechiæ.  |
| " 30...         | 40.1            | 39.5   | 39.1   | 68     | 52   | 36           | 24   | "                   | iv                         | v    | Do. animal dull.  |
| December 1...   | 39.1            | 39.0   | 39.1   | 48     | 52   | 12           | 16   | "                   | v                          | v    | Do. do.   |
| " 2...          | 38.7            | 39.4   | 38.7   | 40     | 44   | 16           | 28   | "                   | v                          | v    | Conjunctivæ pale, slightly yellow.  |
| " 3...          | 38.7            | 39.1   | 40.3   | 48     | 52   | 12           | 20   | Absent              | ...                        | v    | Do. do.   |
| " 4...          | 40.4            | 40.6   | 40.6   | 64     | 64   | 12           | 20   | "                   | v                          | v    | Do. do.   |
| " 5...          | 41.1            | 40.8   | 40.3   | 52     | 68   | 12           | 24   | "                   | ii                         | v    | Do. do.   |
| " 6...          | 40.6            | 40.8   | 40.6   | 64     | 64   | 12           | 24   | "                   | v                          | vi   | Do. No petechiæ; much œdema of scrotum; appetite poor.                              |
| " 7...          | 39.9            | 40.5   | 40.2   | 56     | 68   | 12           | 40   | "                   | vi                         | vi   | Conjunctivæ pale, slightly yellow; slight diarrhœa; corn, hay, and lucerne refused. |
| " 8...          | 39.1            | 39.6   | 39.4   | 52     | 60   | 16           | 32   | "                   | ...                        | vi   | Do. do.   |
| " 9...          | 38.7            | 39.5   | 38.8   | 52     | 64   | 12           | 36   | "                   | v                          | vi   | Right conjunctiva injected, left, petechiated; diarrhœa less, no appetite.          |
| " 10...         | 38.2            | 39.1   | 38.9   | 52     | 68   | 12           | 44   | "                   | vi                         | vi   | Much diarrhœa since the early morning, animal eats nothing.                         |
| " 11...         | 38.2            | 39.0   | 38.8   | 56     | 84   | 20           | 40   | "                   | vi                         | vi   | Do. do. do.   |
| " 12...         | 37.4            | 39.2   | 37.5   | 52     | 112  | 16           | 6    | "                   | vi                         | vi   | Administered Spt. Chloroformi. ʒiss. Spt. Ammon. Ar. ʒi. aq. ad Oss.                |
| " 13...         | 37.1            | 38.9   | ...    | 112    | ...  | 36           | ...  | "                   | vi                         | ...  | Death occurred at 3 P.M.  |

13th December 1894. Autopsy shortly after death. The body is somewhat emaciated, the extremities are fine, and there is no swelling or œdema on the under-surface of the belly.

*Thorax*.—There is no fluid in the pleural cavities, and no adhesions of the pleuræ.

*Lungs*.—The apices are the seat of emphysema, the organs are otherwise healthy.

The pericardial sac contains a small quantity of a yellowish coloured fluid.

*Heart* weighs 5 lbs. 3½ ozs. Cavities healthy in appearance with the exception that the endocardial lining is tinted yellow in colour.



The *abdominal cavity* is free from fluid.

*Liver* weighs 16 lbs., 15½ ozs., and is considerably enlarged. The anterior surface presents marked signs of old inflammation. *On section*, there are no calcareous nodules.

*Spleen* weighs 2 lbs. 4½ ozs. Both surfaces of the organ are covered with dilated and varicosed lymphatics, small yellow masses being visible in their course. *On section*, the tissues are firm and appear healthy, but caseous pus exudes from the blocked vessels. Several enlarged glands occupy the hilum of the organ, which on section were found to be caseous.

*Kidneys.*—The right weighs 1 lb. 12½ ozs.; the left 1 lb. 10½ ozs. Tissues healthy.

*Stomach* somewhat distended with food, which on section emits a very foul odour. The *cuticular* portion is stained a bright yellow colour. The mucous membrane of the *villous* portion is slightly congested, and there are three tumours due to the "*Spiroptera Megastoma*." One measuring  $1\frac{1}{2}$  inches long, by one inch in width, situated midway between the line of demarcation and the pylorus, the other two involve both portions of the organ. Dotted about below the mucous membrane are small elevated thickenings, probably the seats of the same parasites.

The *small and large Intestines* present a healthy appearance.

*Bladder.*—Ditto.

HORSE No. CXIV.

Australian Entire Horse, irongrey in colour, aged 5 years, belonging to the Bombay Mounted Police, No. 58, was purchased on the 6th June 1894. The animal was kept from the 6th June until 28th of November in the following places:—

Oomer Jumal's Stables, 6th June to 9th June 1894.

Pailonjee's Hotel Stables, 10th June to 16th July 1894.

Parel Veterinary Hospital, 17th July to 28th September 1894.

Byculla Police Lines, 29th September to 30th September 1894.

Mount Road Stables, 1st October to 6th October 1894.

Walkeshwar, 7th October to 15th October 1894.

Police Lines, Byculla, 16th October to 25th October 1894.

Bellasis Lines, 26th October to 14th November 1894.

Police Lines, 15th November to 21st November 1894.

Parel Veterinary Hospital, 22nd November to 27th November 1894.

28th November.—The horse arrived at the Laboratory Hospital, Poona.

*State on admission.*—The animal is in very poor condition, the ribs are visible, the belly is tucked up, and there is considerable loss of flesh. The conjunctival membranes are excessively pale and anæmic, but there are no petechiæ visible. The skin is hot and the ordinary symptoms of fever are present, together with some swelling and œdema of the fetlocks. The appetite is fairly good, but the fæces are soft and pultaceous when passed, and some drops of a reddish-brown coloured fluid escape from the anus after each action of the bowels. Temp. 8 A.M. 40°C., P. 64, R. 12. The hæmatozoa are few in the blood.

| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respirat on. |      | Æmulsion of<br>in Blood. | Medicine<br>Arsenic<br>(Grains.) |      | REMARKS.   |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|--------------------------|----------------------------------|------|--|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                          | A.M.                             | P.M. |  |
| 1894.           |                 |        |        |        |      |              |      |                          | A.M.                             | P.M. |  |
| Novem. 29...    | 40·0            | 38·1   | 38·3   | 64     | 48   | 12           | 16   | Few.                     | ...                              | iv   | Conjunctivæ pale, no petechiæ; diarrhœa.   |
| " 30...         | 37·1            | 37·7   | 39·1   | 40     | 44   | 12           | 8    | "                        | iv                               | v    | Do. Corn refused, animal has a tucked-up appearance.   |
| December 1...   | 38·7            | 38·8   | 39·4   | 44     | 44   | 12           | 8    | "                        | v                                | v    | Conjunctivæ pale; corn refused, fæces normal in character.   |
| " 2...          | 38·3            | 39·2   | 39·    | 48     | 56   | 12           | 12   | Absent.                  | v                                | v    | Conjunctivæ pale; corn refused.  |
| " 3...          | 38·1            | 39·7   | 40·1   | 48     | 60   | 12           | 12   | "                        | ...                              | v    | Do. do.  |
| " 4...          | 38·3            | 39·5   | 39·    | 52     | 60   | 8            | 20   | "                        | v                                | v    | Do. do.  |
| " 5...          | 38·4            | 39·4   | 40·1   | 72     | 60   | 36           | 16   | "                        | v                                | v    | Animal very thin and weak.   |
| " 6...          | 39·0            | 40·1   | 40·2   | 48     | 56   | 8            | 8    | "                        | iii                              | v    | Conjunctivæ pale, slightly injected, no petechiæ. Slight œdema under anterior portion of under-surface of abdomen. |
| " 7...          | 39·0            | 39·4   | 40·2   | 48     | 60   | 16           | 20   | "                        | v                                | vi   | Conjunctivæ pale, slightly injected, no petechiæ. No appetite, lucerne given in small quantities frequently.       |
| " 8...          | 38·7            | 39·8   | 40·5   | 48     | 56   | 8            | 20   | "                        | ...                              | iii  | Conjunctivæ pale, slightly injected, no petechiæ. Shoes removed.   |
| " 9...          | 38·6            | 39·3   | 39·6   | 40     | 48   | 12           | 12   | "                        | i                                | vi   | Conjunctivæ very pallid, no injection, and no petechiæ; cough.   |
| " 10...         | 39·5            | 41·5   | 41·7   | 52     | 104  | 20           | 16   | "                        | ...                              | vi   | Do. do.  |
| " 11...         | 40·6            | 40·8   | 40·8   | 52     | 104  | 12           | 24   | "                        | ...                              |      | Animal eats nothing.   |
| " 12...         | 40·1            | 40·8   | ...    | 64     | ...  | 12           | ...  | "                        | ...                              |      | Administered Spt. Chloroformi. ʒiiss. Spt. Ammon. Ar. ʒi. aq. ad Oss.  |
|                 |                 |        |        |        |      |              |      |                          |                                  |      | Death occurred at 5 P.M.   |





PLATE III.



*Calcutta Phototype Co.*

HORSE No. CXV.  
Taken during treatment, which terminated successfully.

13th December 1894.—Autopsy, 1½ hours after death.

The body is considerably emaciated. There is a certain amount of swelling and œdema of the lower extremities, especially of the hind quarters.

*Thorax*.—There is no fluid in the pleural cavities, or adhesions of the pleuræ.

*Lungs*.—The apex of the right organ and for 9 inches posteriorly is the seat of consolidation. On section, the individual lobules are of a deep red, and insulated by a thin layer of a greenish-yellow coloured jelly. The remaining portion of the lung is distended with air and presents a healthy appearance. The left is normal in appearance, and on section.

The pericardial sac contains several drachms of a semi-turbid fluid.

*Heart*.—Weighs 5 lbs. 11 ozs., is normal in size, and both externally as well as internally presents no abnormal features.

The abdominal cavity contains 19½ ounces of a turbid, orange-coloured fluid.

*Liver*.—Weighs 15 lbs. 6 ozs., is somewhat enlarged, and the capsule covering the convex surfaces of the right and left lobes presents signs of old perihepatitis.

On section.—The tissues are of a deep red colour, and are firm, but there are a few small calcareous bodies dotted over the cut surfaces.

*Spleen*.—Weighs 1 lb. 5½ ozs., normal in size, a few red-brick coloured ecchymoses are dotted over both surfaces. On section, the tissues are firm.

*Kidneys*.—Right weighs 2 lbs. 8 ozs., left weighs 2 lbs. 11¾ ozs., considerably hypertrophied. The capsules strip easily, the surface of the organs presents a normal appearance, with the exception that the stellate veins are somewhat injected.

On section.—The tissues present a normal appearance.

*Stomach*.—Contains a certain amount of semi-digested food.

On section.—The cuticular portion is normal in appearance, but the mucous membrane of the villous portion is somewhat dark in colour and emits a foul odour, due to the presence of a nest of the Spiroptera Megastoma.

*Small Intestines*.—The pyloric end of the gut is normal in appearance, but that portion bordering on the ileo-cæcal valve is congested, but there is no erosion of the mucous membrane.

*Large Intestines*.—The mucous membrane is highly congested, and there are some signs of blood upon the fæcal matter. The mucous membrane of the Rectum is also congested, and there is on its surface a quantity of glairy viscid material resembling white of egg.

*Bladder*.—Contains some 25 ounces of orange-coloured urine. On section.—The mucous membrane is not petechiated or congested.

#### HORSE No. CXV.

Bay Entire Horse from Persian Gulf, aged 4 years, belonging to the Bombay Mounted Police, was purchased on the 16th July 1894, and was kept from 16th July to 27th November in the following stables:—

Pallongjee's Hotel stables—16th July to 22nd July 1894.

Walkeshwar stables—23rd July to 15th October 1894.

Byculla Police Lines—16th October to 25th October 1894.

Bellasis Road stables—26th October to 22nd November 1894.

Parel Veterinary Hospital—22nd November to 27th November 1894.

The horse was despatched to the Laboratory Hospital, Poona, on the evening of the 27th, and arrived at 8 A.M., November 28th.

*State on admission*.—The animal is in good condition. The visible mucous membranes are pale, but there are no petechiæ on the conjunctivæ. The skin is cool and the extremities are fine. Temperature 8 A.M. 38°C., P. 32, R. 12. The hæmatozoon is absent from the blood. The appetite is good, and the dung healthy in appearance.

| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoon in Blood. | Medicine Arsenic (Grains). |      | REMARKS.   |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|----------------------|----------------------------|------|--|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                      | A.M.                       | P.M. |  |
| 1894.           |                 |        |        |        |      |              |      |                      |                            |      |  |
| November 29 ... | 38.0            | 38.1   | 38.2   | 32     | 52   | 12           | 28   | Absent.              | ...                        | iv   | Conjunctivæ clear.   |
| " 30 ...        | 38.1            | 38.1   | 38.3   | 32     | 36   | 16           | 20   | Few.                 | iv                         | v    | Do. injected.  |
| December 1 ...  | 38.3            | 38.3   | 38.4   | 32     | 44   | 20           | 16   | "                    | v                          | v    | Do. and yellow.  |
| " 2 ...         | 38.2            | 38.1   | 38.2   | 36     | 40   | 16           | 24   | "                    | ...                        | v    | Do. do.  |
| " 3 ...         | 37.7            | 38.2   | 38.3   | 40     | 40   | 12           | 16   | "                    | v                          | v    | Right conjunctiva petechiated, left, unchanged.  |
| " 4 ...         | 38.1            | 40.3   | 38.2   | 40     | 44   | 12           | 28   | Absent.              | ...                        | v    | Do. left, clear.   |
| " 5 ...         | 37.8            | 38.1   | 38.3   | 44     | 44   | 16           | 24   | "                    | v                          | v    | Do. slight urticarial eruption on right side, hind fetlocks swollen.   |
| " 6 ...         | 38.0            | 38.2   | 38.2   | 40     | 36   | 16           | 16   | "                    | v                          | vi   | Conjunctivæ injected, right, one small ecchymosis, left, free. Large œdematous patches and swelling on under-surface of abdomen; eruption on near flank, and slightly on the off side. |
| " 7 ...         | 38.1            | 38.3   | 38.6   | 40     | 36   | 12           | 16   | "                    | vi                         | vi   | œdema beneath abdomen slightly increased in amount.  |



| Month and Date. |        | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Medicine<br>Arsenic<br>(Grains). |      | REMARKS.  |
|-----------------|--------|-----------------|--------|--------|--------|------|--------------|------|------------------------|----------------------------------|------|---|
|                 |        | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | A.M.                             | P.M. |   |
| 1894.           |        |                 |        |        |        |      |              |      |                        |                                  |      |   |
| December        | 8 ...  | 38.0            | 38.4   | 38.4   | 40     | 40   | 12           | 20   | Absent.                | vi                               | vi   | Conjunctivæ injected, no petechiæ.                          |
| "               | 9 ...  | 38.1            | 38.3   | 38.4   | 40     | 56   | 12           | 20   | "                      | iii                              | vi   | Do. do.   |
| "               | 10 ... | 38.0            | 38.4   | 38.5   | 40     | 48   | 16           | 40   | "                      | vi                               | vi   | Animal very dull, conjunctivæ unchanged.<br>Corn eaten.     |
| "               | 11 ... | 38.2            | 38.3   | 38.4   | 44     | 44   | 16           | 20   | "                      | vi                               | vi   | Animal brighter do.   |
| "               | 12 ... | 38.1            | 38.3   | 38.3   | 40     | 44   | 12           | 24   | "                      | vi                               | vi   | Do. do.   |
| "               | 13 ... | 37.8            | 38.1   | 38.3   | 40     | 40   | 16           | 12   | "                      | vi                               | vi   | Conjunctivæ slightly injected, discharge<br>from both eyes. |
| "               | 14 ... | 38.0            | 38.1   | 38.0   | 40     | 44   | 16           | 16   | "                      | vi                               | vi   | Do. do.   |
| "               | 15 ... | 37.7            | 38.3   | 38.6   | 44     | 44   | 16           | 32   | "                      | vi                               | vi   | Do. do.   |
| "               | 16 ... | 37.7            | 38.6   | 38.7   | 44     | 48   | 12           | 24   | "                      | vi                               | vi   | Do. do.   |
| "               | 17 ... | 38.3            | 38.6   | 39.0   | 44     | 48   | 20           | 36   | "                      | vi                               | vi   | Do. do.   |
| "               | 18 ... | 38.5            | 39.3   | 39.6   | 44     | 52   | 12           | 48   | "                      | vi                               | iii  | Do. animal brighter.  |
| "               | 19 ... | 38.2            | 38.6   | 38.6   | 48     | 56   | 12           | 44   | "                      | iii                              | iii  | Do. do.   |
| "               | 20 ... | 37.8            | 38.3   | 38.3   | 48     | 52   | 12           | 44   | "                      | iii                              | iii  | Do. swelling beneath<br>abdomen and sheath.                 |
| "               | 21 ... | 37.8            | 38.4   | 38.9   | 60     | 52   | 12           | 40   | "                      | iii                              | iii  | Condition unchanged.  |
| "               | 22 ... | 38.0            | 38.3   | 38.6   | 48     | 56   | 12           | 40   | "                      | iii                              | iii  | Do. do.   |
| "               | 23 ... | 38.1            | 38.4   | 38.6   | 52     | 48   | 16           | 48   | "                      | iii                              | iii  | Do. do.   |
| "               | 24 ... | 38.0            | 38.1   | 38.5   | 44     | 40   | 16           | 36   | "                      | iii                              | iii  | Conjunctivæ dirty and injected.                             |
| "               | 25 ... | 37.7            | 38.2   | 38.6   | 40     | 44   | 12           | 36   | "                      | iii                              | iii  | Do. do.   |
| "               | 26 ... | 37.8            | 38.1   | 38.4   | 36     | 44   | 12           | 28   | "                      | iii                              | iii  | Conjunctivæ less injected.                                  |
| "               | 27 ... | 37.8            | 38.3   | 38.4   | 36     | 40   | 20           | 24   | "                      | iii                              | iv   | Conjunctivæ clear.  |
| "               | 28 ... | 38.2            | 38.2   | 38.4   | 36     | 40   | 12           | 24   | "                      | iv                               | iv   | Do. slightly injected and pete-<br>chiated.                 |
| "               | 29 ... | 37.8            | 38.1   | 38.3   | 44     | 36   | 16           | 24   | "                      | iv                               | iv   | Do. do.   |
| "               | 30 ... | 37.8            | 38.1   | 38.1   | 40     | 40   | 12           | 24   | "                      | iv                               | iv   | Do. do.   |
| "               | 31 ... | 38.1            | 38.1   | 38.6   | 40     | 40   | 12           | 20   | "                      | iv                               | iv   | Do. do.   |
| 1895.           |        |                 |        |        |        |      |              |      |                        |                                  |      |   |
| January         | 1 ...  | 38.0            | 38.2   | 38.6   | 36     | 40   | 12           | 20   | "                      | iv                               | iv   | Conjunctivæ injected.                                       |
| "               | 2 ...  | 38.0            | 38.0   | 38.4   | 36     | 40   | 12           | 20   | "                      | iv                               | iv   | Do.   |
| "               | 3 ...  | 38.0            | 38.1   | 38.3   | 36     | 36   | 12           | 16   | "                      | iv                               | iv   | Do.   |
| "               | 4 ...  | 37.7            | 38.0   | 38.4   | 40     | 40   | 12           | 16   | "                      | iv                               | iv   | Do.   |
| "               | 5 ...  | 37.7            | 38.1   | 38.2   | 36     | 40   | 12           | 12   | "                      | iv                               | iv   | Conjunctivæ nearly clear.                                   |
| "               | 6 ...  | 37.8            | 38.1   | 38.5   | 44     | 36   | 12           | 16   | "                      | iv                               | iv   | Do.   |
| "               | 7 ...  | 38.1            | 38.3   | 38.3   | 36     | 36   | 12           | 24   | "                      | iv                               | iv   | Do.   |
| "               | 8 ...  | 38.1            | 38.1   | 38.2   | 32     | 36   | 12           | 20   | "                      | iv                               | iv   | Do.   |
| "               | 9 ...  | 38.0            | 37.7   | 38.1   | 32     | 36   | 16           | 20   | "                      | iv                               | iv   | Right conjunctiva one extravasation, left,<br>clear.        |
| "               | 10 ... | 38.0            | 37.8   | 38.3   | 36     | 36   | 20           | 16   | "                      | iv                               | iv   | Do. do.   |
| "               | 11 ... | 37.9            | 37.8   | 37.9   | 28     | 36   | 8            | 12   | "                      | iv                               | iv   | Conjunctivæ slightly injected.                              |
| "               | 12 ... | 37.9            | 38.0   | 38.2   | 27     | 36   | 8            | 20   | "                      | iv                               | iv   | Do. do.   |
| "               | 13 ... | 37.9            | 38.2   | 38.2   | 32     | 34   | 13           | 20   | "                      | iv                               | iv   | Conjunctivæ clear.  |
| "               | 14 ... | 38.1            | 38.1   | 38.1   | 36     | 34   | 10           | 12   | "                      | iv                               | iii  | Do.   |
| "               | 15 ... | 38.0            | 38.0   | 38.6   | 36     | 34   | 12           | 18   | "                      | iii                              | iii  | Do.   |
| "               | 16 ... | 37.8            | 38.0   | 38.2   | 28     | 32   | 12           | 18   | "                      | iii                              | iii  | Do.   |
| "               | 17 ... | 38.0            | 38.1   | 38.1   | 36     | 36   | 12           | 16   | "                      | iii                              | iii  | Do.   |
| "               | 18 ... | 37.5            | 37.5   | 38.4   | 26     | 32   | 12           | 20   | "                      | iii                              | iii  | Do.   |
| "               | 19 ... | 37.8            | 37.5   | 38.2   | 36     | 40   | 12           | 20   | "                      | iii                              | iii  | Do.   |
| "               | 20 ... | 37.5            | 38.4   | 38.6   | 40     | 40   | 12           | 28   | "                      | iii                              | ii   | Conjunctivæ pale, slightly yellow.                          |
| "               | 21 ... | 37.7            | 38.2   | 38.4   | 52     | 48   | 12           | 16   | "                      | ii                               | ii   | Do. do.   |
| "               | 22 ... | 37.9            | 37.9   | 38.0   | 36     | 40   | 12           | 12   | "                      | ii                               | ii   | Conjunctivæ slightly injected.                              |
| "               | 23 ... | 37.6            | 37.7   | 38.2   | 36     | 36   | 12           | 12   | "                      | ii                               | ii   | Do. do.   |
| "               | 24 ... | 37.7            | 37.8   | 38.1   | 44     | 44   | 12           | 16   | "                      | ii                               | ii   | Do. do.   |
| "               | 25 ... | 37.6            | 38.2   | 38.2   | 32     | 40   | 8            | 12   | "                      | ii                               | ii   | Do. do.   |
| "               | 26 ... | 38.2            | 37.9   | 38.2   | 36     | 36   | 20           | 20   | "                      | ii                               | ii   | Do. do.   |
| "               | 27 ... | 37.5            | 38.0   | 38.2   | 28     | 32   | 12           | 24   | "                      | ii                               | ii   | Do. do.   |
| "               | 28 ... | 37.8            | 38.2   | 38.0   | 32     | 44   | 12           | 24   | "                      | ii                               | ii   | Do. do.   |
| "               | 29 ... | 37.7            | 37.8   | 38.3   | 40     | 36   | 12           | 20   | "                      | ii                               | ii   | Do. do.   |
| "               | 30 ... | 37.2            | 37.7   | 38.2   | 28     | 24   | 8            | 14   | "                      | ii                               | ii   | Do. do.   |
| "               | 31 ... | 37.7            | 38.1   | 37.8   | 28     | 36   | 24           | 12   | "                      | ii                               | ii   | Do. do.   |
| February        | 1 ...  | 37.9            | 38.2   | 38.5   | 36     | 36   | 12           | 20   | "                      | ii                               | ii   | Conjunctivæ clear.  |
| "               | 2 ...  | 37.9            | 37.8   | 38.4   | 32     | 40   | 12           | 16   | "                      | ii                               | ii   | Do.   |
| "               | 3 ...  | 37.4            | 38.1   | 40.5   | 28     | 36   | 12           | 16   | "                      | ii                               | ...  | Do.   |
| "               | 4 ...  | 37.5            | 37.6   | 38.2   | 28     | 32   | 12           | 12   | "                      | ...                              | ...  | Do.   |
| "               | 5 ...  | 37.4            | 37.6   | 38.1   | 28     | 32   | 12           | 12   | "                      | ...                              | ...  | Conjunctivæ slightly injected.                              |

RECORDS OF TEMPERATURE PULSE AND RESPIRATION.

Horse No. CXV      Bombay Police Charger No. 86      Age 4      Sex Entire      Colour Bay 4 white Stockings  
Disease Surra Naturally Contracted      Date of Attack Nov. 23 1894      Result Cured      Date of Result      Register No. CXV      Ward

| Dates of Observation                    |  | 1894<br>Nov. 23 |     | 24   | 25   | 26   | 27   | 28   | 29   | 30   | Dec. 1 | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   |
|---|--|-----------------|-----|------|------|------|------|------|------|------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Days of Disease                         |  | 15              | 16  | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24     | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   | 36   | 37   |      |
| Organisms in Blood                      |  |                 |     |      |      |      |      |      | F    | F    | F      | F    |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Total blood<br>counted daily<br>(grams) | Urine<br>excreted<br>daily<br>(litres) | Temperature     |     | Time | Time | Time | Time | Time | Time | Time | Time   | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |
|   |  | F               | C   |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|   |  | 114             |     |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 35                                      | 120                                    | 113             | 38° |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 50                                      | 110                                    | 112             |     |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|   |  | 111             | 38° |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 45                                      | 100                                    | 110             |     |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|   |  | 109             | 38° |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 40                                      | 90                                     | 108             | 42° |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|   |  | 107             |     |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 35                                      |  | 106             | 41° |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|   |  | 105             |     |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 30                                      | 70                                     | 104             | 40° |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|   |  | 103             |     |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 25                                      | 60                                     | 102             | 39° |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|   |  | 101             |     |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 20                                      | 50                                     | 100             | 38° |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|   |  | 99              |     |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 15                                      | 40                                     | 98              | 37° |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|   |  | 97              |     |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 10                                      | 30                                     | 96              | 36° |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|   |  | 95              |     |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 5                                       |  | 94              | 35° |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|   |  | 93              |     |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|   |  | 92              | 34° |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

eruption under surface abdomen both thighs

Arseric Grains

Temperature ----- Pulse ----- Respiration -----  
Haematocrit -----

Drawn & Lined: Govt. Printing Office, Poona 1895





## RECORDS OF TEMPERATURE PULSE AND RESPIRATION.

Colour Bay 4 white Stockings.

Age \_\_\_\_\_ Sex \_\_\_\_\_

Horse No CXV

Register No CXV \_\_\_\_\_ Ward \_\_\_\_\_

Date of Result

-Result Cured-

Date of Attack

*Disease Surro Naturally contracted*

[illegible]

Drum & Lath. Govt Photodupl. Office, Poona 1895

Pulse-----  
Respiration-----

Temperature \_\_\_\_\_  
Hæmatozoa \_\_\_\_\_





RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Horse No C XV      Sex      Colour Bay      Age      Register No C XV      Date of Result      Result Cured      Date of Attack      Disease Surra Naturally contracted

| Dates of Observation.  |                  | Jan 8       |     | 9    | 10 | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |
|------------------------|------------------|-------------|-----|------|----|------|----|------|----|------|----|------|----|------|----|------|----|------|----|------|----|------|----|------|----|
| Respiration per minute | Pulse per minute | Temperature |     | Time |    | Time |    | Time |    | Time |    | Time |    | Time |    | Time |    | Time |    | Time |    | Time |    | Time |    |
|                        |                  | F           | C   | AM   | PM | AM   | PM | AM   | PM | AM   | PM | AM   | PM | AM   | PM | AM   | PM | AM   | PM | AM   | PM | AM   | PM | AM   | PM |
| 55                     | 120              | 113         | 45° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
| 50                     | 110              | 112         | 44° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
| 45                     | 100              | 111         | 43° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
| 40                     | 90               | 109         | 42° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
| 35                     | 80               | 107         | 41° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
| 30                     | 70               | 106         | 40° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
| 25                     | 60               | 105         | 39° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
| 20                     | 50               | 104         | 38° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
| 15                     | 40               | 103         | 37° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
| 10                     | 30               | 102         | 36° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
| 5                      | 20               | 101         | 35° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
|                        |                  | 100         | 34° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
|                        |                  | 99          | 33° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
|                        |                  | 98          | 32° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
|                        |                  | 97          | 31° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
|                        |                  | 96          | 30° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
|                        |                  | 95          | 29° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |
|                        |                  | 94          | 28° | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 | 19   | 20 | 21   | 22 | 23   | 24 | 25   | 26 | 27   | 28 | 29   | 30 |      |    |

Record of Organisms in Blood  
Swarming  
Very numerous  
Numerous  
Few  
Absent

Temperature  
Pulse  
Respiration  
Hematocrit

Drawn & Lined by Phosphorus, 1905



RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Horse No. CXV      Age    Sex    Colour Bay & white Stockings         Disease Surra Naturally Contracted      Date of Attack         Results Cured      Register No. CXV      Date of Result         Ward   

| Dates of Observation          |                         | Jan <sup>y</sup><br>31 | Febr<br>1        | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    |  |
|-------------------------------|-------------------------|------------------------|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| Days of Disease               |                         | 84                     | 85               | 86    | 87    | 88    | 89    | 90    | 91    | 92    | 93    | 94    | 95    | 96    | 97    | 98    | 99    | 100   | 101   | 102   | 103   | 104   | 105   | 106   |  |
| Organisms in Blood            |                         | —                      |                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |
| Respiration<br>per<br>minute. | Pulse<br>per<br>minute. | Temperature<br>F       | Temperature<br>C | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  |  |
|                               | AM                      | PM                     | AM               | PM    | AM    | PM    | AM    | PM    | AM    | PM    | AM    | PM    | AM    | PM    | AM    | PM    | AM    | PM    | AM    | PM    | AM    | PM    | AM    | PM    |  |
| 55                            | 120                     | 114                    | 41°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
| 50                            | 110                     | 112                    | 42°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
| 45                            | 100                     | 110                    | 43°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
| 40                            | 90                      | 109                    | 42°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
| 35                            | 80                      | 107                    | 41°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
| 30                            | 70                      | 106                    | 40°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
| 25                            | 60                      | 105                    | 39°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
| 20                            | 50                      | 104                    | 38°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
| 15                            | 40                      | 103                    | 37°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
| 10                            | 30                      | 102                    | 36°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
| 5                             | 20                      | 101                    | 35°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
|                               |                         | 100                    | 34°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
|                               |                         | 99                     | 33°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
|                               |                         | 98                     | 32°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
|                               |                         | 97                     | 31°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
|                               |                         | 96                     | 30°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
|                               |                         | 95                     | 29°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |
|                               |                         | 94                     | 28°              | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 | 3 1/2 |  |

Record of Organisms in Blood: Swarming, Very numerous, Numerous, Few, Absent

Temperature \_\_\_\_\_ Pulse \_\_\_\_\_ Hematozoa \_\_\_\_\_ Respiration \_\_\_\_\_

Drawn & Litho Gust. Petersen & Co. Berlin 1905





## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Horse No CXV

Age \_\_\_\_\_ Sex \_\_\_\_\_ Colour \_\_\_\_\_

Age \_\_\_\_\_ Sex \_\_\_\_\_ Colour \_\_\_\_\_

Disease Supra Naturally contracted \_\_\_\_\_ Date of Attack \_\_\_\_\_ Result, Cured \_\_\_\_\_ Date of Result \_\_\_\_\_ Register No XCV Ward \_\_\_\_\_

Disease Supra Naturally contracted \_\_\_\_\_ Date of Attack \_\_\_\_\_ Result, Cured \_\_\_\_\_ Date of Result \_\_\_\_\_ Register No XCV Ward \_\_\_\_\_

Disease Supra Naturally contracted \_\_\_\_\_ Date of Attack \_\_\_\_\_ Result, Cured \_\_\_\_\_ Date of Result \_\_\_\_\_ Register No XCV Ward \_\_\_\_\_

[illegible]

Temperature \_\_\_\_\_

Haematozoa \_\_\_\_\_

Pulse \_\_\_\_\_

Respiration \_\_\_\_\_

Printed & Sold by Geo. P. Putnam & Co., New York.





| Month and Date. | Temperature. °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in blood. | Medicine<br>Arsenic<br>(grains.) | REMARKS.                                   |
|-----------------|------------------|--------|--------|--------|------|--------------|------|------------------------|----------------------------------|--|
|                 | A.M.             | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        |                                  |  |
| 1895.           |                  |        |        |        |      |              |      |                        | A.M. P.M.                        |  |
| February 6 ...  | 37.3             | 37.6   | 38.1   | 28     | 32   | 12           | 12   | Absent.                | ... ..                           | Right conjunctiva yellow, left, pale.      |
| " 7 ...         | 37.4             | 37.5   | 37.8   | 24     | 28   | 12           | 12   | "                      | ... ..                           | Do. left, injected.                        |
| " 8 ...         | 37.6             | 38.0   | 38.1   | 40     | 36   | 12           | 16   | "                      | ... ..                           | Right conjunctiva clear do.                |
| " 9 ...         | 37.4             | 37.9   | 38.0   | 32     | 40   | 11           | 20   | "                      | ... ..                           | Conjunctivæ clear, few bright red petechiæ |
| " 10 ...        | 37.5             | 37.8   | 37.9   | 28     | 36   | 12           | 12   | "                      | ... ..                           | on nasal membrane.                         |
| " 11 ...        | 37.3             | 37.5   | 38.6   | 28     | 28   | 8            | 12   | "                      | ... ..                           | Do.  |
|                 |                  |        |        |        |      |              |      |                        | Pot. Nit.<br>drachms.            | Conjunctivæ yellow.                        |
| " 12 ...        | 37.5             | 37.5   | 38.1   | 32     | 36   | 12           | 16   | "                      | ... ii                           | Do.  |
| " 13 ...        | 37.7             | 37.8   | 38.2   | 32     | 36   | 16           | 12   | "                      | ... ii                           | Do.  |
| " 14 ...        | 37.8             | 38.1   | 38.2   | 28     | 32   | 12           | 16   | "                      | ... ii                           | Do.  |
| " 15 ...        | 37.9             | 38.0   | 38.2   | 24     | 36   | 12           | 32   | "                      | ... ii                           | Right conjunctiva clear, left, anæmic.     |
| " 16 ...        | 37.9             | 37.8   | 37.9   | 36     | 32   | 12           | 16   | "                      | ... ii                           | Conjunctivæ faintly yellow.                |
| " 17 ...        | 37.8             | 37.8   | 37.9   | 28     | 36   | 20           | 16   | "                      | ... ii                           | Conjunctivæ clearer; hard swelling on      |
| " 18 ...        | 38.0             | 38.2   | 38.0   | 32     | 44   | 20           | 36   | "                      | ... ii                           | lower lip.                                 |
| " 19 ...        | 38.0             | 38.0   | 38.1   | 36     | 36   | 12           | 28   | "                      | ... ..                           | Do. swelling tender.                       |
| " 20 ...        | 37.8             | 37.9   | 38.0   | 36     | 36   | 16           | 12   | "                      | ... ..                           | Do. do.                                    |
| " 21 ...        | 37.5             | 37.8   | 38.2   | 32     | 36   | 24           | 12   | "                      | ... ..                           | Do. do.                                    |
| " 22 ...        | 37.7             | 38.1   | 38.0   | 36     | 44   | 12           | 16   | "                      | ... ..                           | Do. abscess burst.                         |
| " 23 ...        | 37.5             | 37.9   | 38.1   | 28     | 28   | 16           | 16   | "                      | ... ..                           | Do. exudation of pus                       |
| " 24 ...        | 37.7             | 37.8   | 38.0   | 24     | 32   | 20           | 16   | "                      | ... ..                           | from abscess.                              |
| " 25 ...        | 37.3             | 37.7   | 38.1   | 28     | 36   | 12           | 16   | "                      | ... ..                           | Do.  |
| " 26 ...        | 38.0             | 37.8   | 37.8   | 36     | 28   | 16           | 12   | "                      | ... ..                           | Right conjunctiva slightly injected, left, |
| " 27 ...        | 38.5             | 37.8   | 37.8   | 36     | 36   | 20           | 16   | "                      | ... ..                           | clear, nasal membrane petechiated.         |
| " 28 ...        | 37.9             | 37.8   | 37.9   | 28     | 32   | 16           | 16   | "                      | ... ..                           | Conjunctivæ clear, abscess much reduced.   |
| March 1 ...     | 37.8             | 37.9   | 37.9   | 24     | 32   | 12           | 16   | "                      | ... ..                           | Do.  |
| " 2 ...         | 36.7             | 38.0   | 37.9   | 28     | 36   | 12           | 20   | "                      | ... ..                           | Do.  |
| " 3 ...         | 37.6             | 37.8   | 37.8   | 32     | 32   | 16           | 20   | "                      | ... ..                           | Do.  |
| " 4 ...         | 38.0             | 37.7   | 37.9   | 28     | 36   | 20           | 20   | "                      | ... ..                           | Do.  |
| " 5 ...         | 37.7             | 37.7   | 37.9   | 32     | 32   | 20           | 12   | "                      | ... ..                           | Do.  |
| " 6 ...         | 37.6             | 37.9   | 37.9   | 28     | 32   | 16           | 24   | "                      | ... ..                           | Do.  |
| " 7 ...         | 38.0             | 38.0   | 38.0   | 28     | 36   | 16           | 28   | "                      | ... ..                           | Right conjunctivæ slightly injected, left, |
| " 8 ...         | 37.9             | 38.0   | 37.9   | 32     | 36   | 32           | 20   | "                      | ... ..                           | clear.                                     |
| " 9 ...         | 37.7             | 38.0   | ...    | 32     | ...  | 16           | ...  | "                      | ... ..                           | Do. do.                                    |
|                 |                  |        |        |        |      |              |      |                        | ...                              | Conjunctivæ clear.                         |
|                 |                  |        |        |        |      |              |      |                        | ...                              | Cured. Returned to Bombay.                 |

TABLE

Showing the daily Fodder ration of Horse No. CXV from December 1st, 1894, to March 9th, 1895, when the animal was returned to Bombay, cured.

| Date.         | Hay. | Lucerne. | Barley. | Bran. | Linseed. | Rice. | Remarks. | Date.          | Hay. | Lucerne. | Barley. | Bran. | Linseed. | Rice. | Remarks. |
|---------------|------|----------|---------|-------|----------|-------|----------|----------------|------|----------|---------|-------|----------|-------|----------|
| 1894.         | Lbs. | Lbs.     | Lbs.    | Lbs.  | Lbs.     | Lbs.  |          | 1894.          | Lbs. | Lbs.     | Lbs.    | Lbs.  | Lbs.     | Lbs.  |          |
| December 1... | 12   | 10       | 6       | 3     | ...      | ...   |          | December 29... | 9    | 10       | 6       | 3     | ...      | ...   |          |
| " 2...        | 16   | "        | "       | "     | ...      | ...   |          | " 30...        | 10.5 | "        | "       | "     | ...      | ...   |          |
| " 3...        | 14   | "        | "       | "     | ...      | ...   |          | " 31...        | 11   | "        | "       | "     | ...      | ...   |          |
| " 4...        | 16   | "        | "       | "     | ...      | ...   |          | 1895.          |      |          |         |       |          |       |          |
| " 5...        | 12   | "        | 4       | 2     | ...      | ...   |          | January 1...   | 7    | "        | "       | "     | ...      | ...   |          |
| " 6...        | 4    | "        | 6       | 3     | ...      | ...   |          | " 2...         | 11   | "        | "       | "     | ...      | ...   |          |
| " 7...        | 11   | "        | "       | "     | ...      | ...   |          | " 3...         | 11   | "        | "       | "     | ...      | ...   |          |
| " 8...        | 16   | "        | "       | "     | ...      | ...   |          | " 4...         | 16   | "        | "       | "     | ...      | ...   |          |
| " 9...        | 12   | "        | "       | "     | ...      | ...   |          | " 5...         | 8    | "        | "       | "     | ...      | ...   |          |
| " 10...       | 7    | "        | "       | 5     | ...      | ...   |          | " 6...         | 12   | "        | "       | "     | ...      | ...   |          |
| " 11...       | 11   | "        | "       | 3     | ...      | ...   |          | " 7...         | 11   | "        | "       | "     | ...      | ...   |          |
| " 12...       | 12   | "        | "       | "     | ...      | ...   |          | " 8...         | 14   | "        | Grain.  | "     | ...      | ...   |          |
| " 13...       | 10   | "        | "       | "     | ...      | ...   |          | " 9...         | 11   | "        | "       | "     | ...      | ...   |          |
| " 14...       | 13   | "        | "       | "     | ...      | ...   |          | " 10...        | 11   | "        | "       | "     | ...      | ...   |          |
| " 15...       | 11   | "        | "       | "     | ...      | ...   |          | " 11...        | 10   | "        | "       | "     | ...      | ...   |          |
| " 16...       | 14   | "        | "       | "     | ...      | ...   |          | " 12...        | 10   | "        | "       | "     | ...      | ...   |          |
| " 17...       | 16   | "        | "       | "     | ...      | ...   |          | " 13...        | 14   | "        | "       | "     | ...      | ...   |          |
| " 18...       | 12   | "        | "       | "     | ...      | ...   |          | " 14...        | 15   | "        | "       | "     | ...      | ...   |          |
| " 19...       | 11   | "        | "       | "     | ...      | ...   |          | " 15...        | 13   | "        | "       | "     | ...      | ...   |          |
| " 20...       | 8    | "        | 5       | 2.5   | ...      | ...   |          | " 16...        | 14.5 | "        | "       | "     | ...      | ...   |          |
| " 21...       | 14   | "        | 5       | 2.5   | ...      | ...   |          | " 17...        | 14   | "        | "       | "     | 1.5      | 1.0   |          |
| " 22...       | 11   | "        | 6       | 3     | ...      | ...   |          | " 18...        | 9    | "        | "       | "     | 0.75     | 0.5   |          |
| " 23...       | 16   | "        | "       | "     | ...      | ...   |          | " 19...        | 14.5 | "        | "       | "     | 1.5      | 1.0   |          |
| " 24...       | 14.5 | "        | "       | "     | ...      | ...   |          | " 20...        | 8    | "        | "       | "     | "        | "     |          |
| " 25...       | 8    | "        | "       | "     | ...      | ...   |          | " 21...        | 8.5  | "        | "       | "     | "        | "     |          |
| " 26...       | 7    | "        | "       | "     | ...      | ...   |          | " 22...        | 10.5 | "        | 8       | "     | "        | "     |          |
| " 27...       | 11   | "        | "       | "     | ...      | ...   |          |                |      |          |         |       |          |       |          |
| " 28...       | 9    | "        | 7       | 2.5   | ...      | ...   |          |                |      |          |         |       |          |       |          |

| Date.         | Hay. | Lucerne. | Gram.   | Bran. | Linseed. | Rice. | Remarks | Date.          | Hay. | Lucerne. | Barley. | Bran. | Linseed. | Rice. | Remarks.                             |
|---------------|------|----------|---------|-------|----------|-------|---------|----------------|------|----------|---------|-------|----------|-------|--------------------------------------|
| 1895.         | Lbs. | Lbs.     | Lbs.    | Lbs.  | Lbs.     | Lbs.  |         | 1895.          | Lbs. | Lbs.     | Lbs.    | Lbs.  | Lbs.     | Lbs.  |                                      |
| January 23... | 6    | 10       | 6       | 3     | 1.5      | 1.0   |         | February 16... | 10.5 | 10       | 6       | 3     | 1.5      | 1     |                                      |
| 24...         | 14.5 | "        | "       | "     | "        | "     |         | 17...          | 10   | "        | 5       | 2.5   | "        | "     |                                      |
| 25...         | 10.0 | "        | "       | "     | "        | "     |         | 18...          | 7    | "        | 6       | 3     | "        | "     |                                      |
| 26...         | 9.5  | "        | 6       | 3     | "        | "     |         | 19...          | 5.5  | "        | "       | "     | "        | "     |                                      |
| 27...         | 7.5  | "        | 4       | 2     | "        | "     |         | 20...          | 10.5 | "        | "       | "     | "        | "     |                                      |
| 28...         | 8    | "        | 6       | 3     | "        | "     |         | 21...          | 7.5  | "        | "       | "     | "        | "     |                                      |
| 29...         | 16   | "        | "       | "     | "        | "     |         | 22...          | 10.5 | "        | "       | "     | "        | "     |                                      |
| 30...         | 7    | "        | "       | "     | "        | "     |         | 23...          | 14.0 | "        | "       | "     | "        | "     |                                      |
| 31...         | 13   | "        | "       | "     | "        | "     |         | 24...          | 11   | "        | "       | "     | "        | "     |                                      |
| February 1... | 8    | "        | "       | "     | "        | "     |         | 25...          | 9    | "        | "       | "     | "        | "     |                                      |
| 2...          | 7    | "        | "       | "     | "        | "     |         | 26...          | 11   | "        | "       | "     | "        | "     |                                      |
| 3...          | 11   | "        | "       | "     | "        | "     |         | 27...          | 11   | "        | "       | "     | "        | "     |                                      |
| 4...          | 9.5  | "        | "       | "     | 0.75     | "     |         | 28...          | 12.5 | "        | "       | "     | "        | "     |                                      |
| 5...          | 9    | "        | "       | "     | 1.5      | 0.5   |         | March 1...     | 10.5 | "        | "       | "     | "        | "     |                                      |
| 6...          | 6    | "        | "       | "     | "        | 1     |         | 2...           | 8    | "        | "       | "     | "        | "     |                                      |
| 7...          | 8    | "        | "       | "     | "        | "     |         | 3...           | 9    | "        | "       | "     | "        | "     | Carrots,                             |
| 8...          | 12   | "        | "       | "     | "        | "     |         | 4...           | 9    | "        | "       | "     | "        | "     | 6 lbs.                               |
| 9...          | 5    | "        | "       | "     | "        | "     |         | 5...           | 16   | "        | "       | "     | "        | "     | 6 "                                  |
| 10...         | 6    | "        | "       | "     | "        | "     |         | 6...           | 17   | "        | "       | "     | "        | "     | 6 "                                  |
| 11...         | 13.5 | "        | "       | "     | "        | "     |         | 7...           | 10   | "        | "       | "     | "        | "     | 9 "                                  |
| 12...         | 8    | "        | "       | "     | "        | "     |         | 8...           | 13   | "        | "       | "     | "        | "     | 9 "                                  |
|               |      |          | Barley. | "     | "        | "     |         | 9...           | 9    | "        | "       | "     | "        | "     | 9 "                                  |
| 13...         | 14   | "        | 6       | "     | "        | "     |         | 10...          | 10   | 6        | "       | "     | "        | "     | 3 "                                  |
| 14...         | 12   | "        | 5       | 2.5   | "        | "     |         |                |      |          |         |       |          |       |                                      |
| 15...         | 8    | "        | 5       | 3     | "        | "     |         |                |      |          |         |       |          |       |                                      |
|               |      |          |         |       |          |       |         |                |      |          |         |       |          |       | Animal cured and returned to Bombay, |

Remarks.

This animal was purchased on the 16th July, and Surra was diagnosed on the 23rd November 1894; there is therefore no doubt but that the disease was contracted in Bombay.

Treatment with Arsenic was commenced on the twenty-first day of the disease, just at the termination of an intermission, probably the second.

The hæmatozoon was present in the blood whilst under observation from the 22nd to 25th day of the disease, but after the latter day did not recur; but two days later an urticarial eruption involving the under-surface of the abdomen and thighs appeared and persisted for 24 hours. In all 455 grains of Arsenic were administered in sixty-three (63) days, after which Sodium Iodide in two-drachm doses was continued twice daily for seventy-two hours.

The animal made an uninterrupted recovery, and was returned to the Bombay Mounted Police for duty on March 9th, cured. A letter received subsequently from the Commissioner of Police, Bombay, dated June 28th, 1895, stated that "the horse sent back from Poona on 10th March last is at present in good condition." Again in a letter, dated Police Commissioner's Office, Bombay, 1st February 1896, "the Police horse No. 86 is still alive, and is in good health and condition."

It is here worthy of mention that this horse is the first animal on record, which has been cured of *naturally* contracted Surra.

HORSE No. CXVI.

Grey Australian Gelding, aged 11 years, belonging to the Bombay Tramway Company (No. 388), was purchased on the 28th January 1889. The animal was admitted into the Infirmary with fever on the 17th October 1894, but the Surra hæmatozoon was not discovered until 29th November.

December 1st, 9 A.M.—The horse arrived at the Laboratory Hospital, Poona.

State on admission.—The animal is in poor condition, the ribs are visible. The visible mucous membranes present a slight yellow tinge. There are two bright-red petechiæ on the conjunctival membranes of the left, but they are absent from the right eye. The pulse is weak and thready. There is a small but hard swelling denuded of hair on the off hind limb midway between the patella and the hock; it is not tender on manipulation. There is some swelling and œdema of the scrotum and sheath, which runs forward along the under-surface of the abdomen for a distance of fifteen inches, and the fetlocks are the seat of œdema, but they are not tender to the touch. A small melanotic tumour, one inch in diameter, is situated on the anterior aspect of the prepuce. The appetite is poor on account of the sharpness of the teeth, which do not meet. There are numerous small ulcers on the buccal mucous membrane. The dung contains undigested corn, and its odour is very offensive. Temperature 38.5° C., P. 44, R. 36. The hæmatozoon is absent from the blood.

| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in blood. | Medicine Arsenic (grains.) | REMARKS.   |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------------------------|--|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |                            |  |
| 1894.           |                 |        |        |        |      |              |      |                     | A.M. P.M.                  |  |
| December 1 ...  | 38.5            | 38.4   | 38.5   | 44     | 60   | 36           | 24   | Absent              | ... v                      | Conjunctivæ yellow and petechiated.  |
| " 2 ...         | 38.5            | 38.8   | 40.0   | 52     | 60   | 20           | 16   | Few                 | ... v                      | Conjunctivæ yellow. Slight œdema of sheath and beneath abdomen.  |
| " 3 ...         | 37.4            | 38.1   | 38.8   | 48     | 52   | 12           | 20   | Absent              | v v                        | Condition unchanged.   |
| " 4 ...         | 37.7            | 37.8   | 38.3   | 44     | 48   | 16           | 14   | "                   | v v                        | Conjunctivæ pale yellow. Sulphate of Iron, one drachm administered.  |
| " 5 ...         | 37.8            | 37.7   | 38.7   | 44     | 48   | 12           | 12   | "                   | v v                        | Conjunctivæ pale yellow. Sulphate of Iron one drachm, morning and evening.                                       |
| " 6 ...         | 37.8            | 38.1   | 38.0   | 40     | 48   | 12           | 8    | "                   | v v                        | Conjunctivæ pale, no petechiæ; swelling and œdema of fetlocks. Sulphate of iron, one drachm morning and evening. |
| " 7 ...         | 37.6            | 37.6   | 38.6   | 40     | 48   | 12           | 12   | "                   | v vi                       | Do. do.  |



| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in blood. | Medicine Arsenic (grains). |      | REMARKS.   |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------------------------|------|--|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | A.M.                       | P.M. |  |
| 1894.           |                 |        |        |        |      |              |      |                     |                            |      |  |
| December 8...   | 37·7            | 37·6   | 38·4   | 48     | 60   | 12           | 12   | Absent...           | vi                         | vi   | Conjunctivæ pale, mouth sore; the animal is unable to eat.   |
| „ 9...          | 38·0            | 37·7   | 38·2   | 48     | 48   | 12           | 12   | „ ...               | vi                         | vi   | Conjunctivæ pale, mouth sore; diarrhœa.  |
| „ 10...         | 37·6            | 38·0   | 38·8   | 44     | 56   | 8            | 12   | „ ...               | ...                        | vi   | Conjunctivæ pale, horse cannot masticate, losing flesh, especially between the thighs; diarrhœa continues bad. |
| „ 11...         | 39·0            | 39·0   | 38·0   | 56     | 68   | 16           | 12   | „ ...               | vi                         | vi   | Teeth rasped; diarrhœa continues.  |
| „ 12...         | 37·6            | 38·1   | 37·7   | 68     | 84   | 16           | 16   | „ ...               | ...                        | vi   | Administered Liq. Opii Sed 3 ss in Oss. Aq. at 1-30 P.M.   |
| „ 13...         | 38·1            | 38·5   | 37·7   | 88     | 96   | 16           | 16   | „ ...               | vi                         | ...  | Right conjunctiva orange and injected, left, injected.   |
| „ 14...         | 37·4            | 39·1   | ...    | 96     | ...  | 12           | ...  | „ ...               | ...                        | ...  | Death occurred at 10 A.M.  |

17th December 1894.—Autopsy two hours after death.

Body somewhat emaciated. Slight œdema of the extremities.

Thorax.—Absence of fluid from pleural cavity, no pleural adhesions.

Lungs.—Healthy.

The pericardial sac contains about one drachm of orange-coloured fluid.

Heart.—Weighs 7 lbs. 3½ ozs., and is considerably hypertrophied.

The external and internal surfaces are free from extravasations.

The cavity of the abdomen contains several pints of a straw-coloured fluid.

Liver.—Weighs 17 lbs. 7 ozs. and is considerably enlarged. There are signs of old perihepatitis, together with a few calcareous bodies, which on section are seen invading the structures of the organ. Tissues nutmeg like.

Spleen.—Weighs 1 lb. 7½ ozs., is somewhat atrophied. There are a few subcapsular petechiæ visible. The tissues on section are firm and present a healthy appearance.

Kidneys.—The right weighs 1 lb. 15¾ ozs., the left 2 lbs. ¾ oz. The capsule strips easily, and numerous stellate veins distended with blood are visible. On section, the organs present a deeply congested appearance, and blood flows from the cut surfaces of the vessels.

Stomach, and large and small Intestines.—Present a healthy appearance.

Bladder.—Healthy.

#### HORSE No. CXVII.

Grey Australian Gelding, aged 9 years, coarse bred, belonging to the Bombay Tramway Company (No. 502), was purchased on the 28th January 1890. It was admitted into the Infirmary with fever on 29th November 1894, and the Surra organism was discovered in the blood at the same time.

December 1st, 1894, 9 A.M.—The horse arrived at the Laboratory Hospital, Poona.

State on admission.—The animal is in fair condition, the abdomen is somewhat “tucked up.” The ordinary symptoms of fever are present. The visible mucous membranes present a bright orange colour, and one ecchymosis is present on the right conjunctival membrane, and there is excessive lachrymation. The skin is hot, and the hair staring. Temperature 40·3° C. The pulse is frequent, 46, but regular and of low tension. The respiration is somewhat accelerated, 24 in the minute. The limbs remain fine, and there is a complete absence of œdema from the under-surface of the abdomen. The appetite is fairly good. The hæmatozoa are numerous in the blood, which latter is normal in colour.

| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in blood. | Medicine Arsenic (grains). |      | REMARKS.   |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------------------------|------|--|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | A.M.                       | P.M. |  |
| 1894.           |                 |        |        |        |      |              |      |                     |                            |      |  |
| December 1...   | 40·3            | 40·3   | 40·3   | 40     | 48   | 24           | 16   | Numerous.           | ...                        | v    | Conjunctivæ yellow; œdema of sheath, and beneath abdomen.                  |
| „ 2...          | 38·1            | 38·6   | 39·3   | 40     | 48   | 12           | 24   | Absent              | ...                        | ii   | Conjunctivæ yellow.  |
| „ 3...          | 37·2            | 38·1   | 39·1   | 40     | 48   | 12           | 16   | „                   | ...                        | v    | Do. Sulphate of Iron, one drachm administered P.M.                         |
| „ 4...          | 37·6            | 37·8   | 38·2   | 44     | 48   | 8            | 16   | Few                 | ...                        | v    | Conjunctivæ pale yellow. Sulphate of Iron, one drachm morning and evening. |
| „ 5...          | 37·4            | 38·2   | 38·4   | 40     | 44   | 18           | 12   | „                   | ...                        | v    | Conjunctivæ pale yellow. Sulphate of Iron, one drachm morning and evening. |



| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in blood. | Medicine Arsenic (grains). |      | REMARKS.  |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------------------------|------|---|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | A.M.                       | P.M. |   |
| 1894.           |                 |        |        |        |      |              |      |                     |                            |      |   |
| December 6...   | 37.7            | 38.7   | 38.1   | 48     | 48   | 12           | 12   | Absent ...          | v                          | v    | Conjunctivæ pale yellow. Sulphate of Iron, one drachm morning and evening.                                |
| " 7...          | 37.4            | 37.8   | 38.3   | 40     | 44   | 8            | 16   | " ...               | v                          | vi   | Conjunctivæ pale yellow. Animal much better, eats corn. Sulphate of Iron, one drachm morning and evening. |
| " 8...          | 37.6            | 38.1   | 38.2   | 40     | 40   | 12           | 12   | " ...               | vi                         | vi   | Conjunctivæ pale yellow.  |
| " 9...          | 37.6            | 37.8   | 38.3   | 44     | 44   | 12           | 12   | " ...               | vi                         | vii  | Do. injected.   |
| " 10...         | 37.8            | 38.3   | 39.3   | 40     | 56   | 8            | 12   | " ...               | ...                        | ...  | Do. do. Animal fairly well, but refused Arsenic.  |
| " 11...         | 38.1            | 38.3   | 38.3   | 48     | 52   | 12           | 16   | " ...               | vii                        | vii  | Do. do. Slight diarrhœa.  |
| " 12...         | 38.1            | 38.4   | 38.3   | 56     | 60   | 12           | 16   | " ...               | ...                        | vii  | Do. do. do. Liq Opii Sed 3 ss in Oss Aq, at 1.30 P.M.   |
| " 13...         | 38.0            | 38.2   | 37.7   | 52     | 60   | 12           | 20   | " ...               | ...                        | iii  | Conjunctivæ much injected. Anus patent.   |
| " 14...         | 36.6            | 37.5   | 37.0   | 52     | 72   | 12           | 36   | " ...               | vii                        | ...  | Do. do.   |
| " 15...         | 37.5            | 37.7   | 37.8   | 72     | 112  | 16           | 36   | " ...               | ...                        | ...  | Do. do. Has only eaten 1 lb. of corn since the 12th instant.  |
| " 16...         | 37.7            | 36.7   | 37.7   | 88     | 124  | 24           | 80   | " ...               | ...                        | ...  | Do. do. Flatulence, corn refused.   |
| " 17...         | 37.7            | 37.6   | 38.3   | S 96   | 120  | 24           | 88   | " ...               | ...                        | ...  | Abdominal respiration. Conjunctivæ much injected. Corn refused.   |
| " 18...         |                 |        |        | Death  | at 2 | A.M.         |      |                     |                            |      |   |

18th December 1894.—Autopsy 10 hours after death.

The body is fairly nourished. There is some swelling and œdema of the fetlocks. On section the membranes and tissues are stained an orange colour.

*Thorax*.—There is no fluid in the pleural cavities or adhesions of the pleuræ.

*Lungs*.—There are a few sub-pleural ecchymoses invading the right organ, but they are more numerous on the left. On section the tissues present a healthy appearance. The cavity of the *pericardium* is devoid of fluid.

*Heart*.—Weighs 6 lbs. 4 ozs. The *external* surface is free from extravasations of blood. On section the right auricle and ventricle are blood-stained, but the cavities are free from subendocardial extravasations. The valves are healthy.

*Abdominal cavity* is free from fluid.

*Liver*.—Weighs 11 lbs. 3 ozs. The convex surface of both lobes is the seat of old perihepatitis. On section the tissues are firm, and present a fairly healthy condition.

*Spleen*.—Weighs 1 lb. 8½ ozs., is large, and is dotted over with a few sub-capsular petechiæ. On section the tissues are firm and the malpighian corpuscles not prominent.

*Kidneys*.—Right weighs 1 lb. 3½ ozs. Left weighs 1 lb. 2¾ ozs. The capsules strip easily; there are no petechiæ. On section the cortical portions appear pale, and the medullary portions darker in colour, but otherwise they appear healthy.

*Stomach*.—The external surface of the organ is healthy. On section the cavity contains some semi-digested food. There are a few small patches of congestion on the mucous membrane of the *villous* portion, about 1½ inches from the pylorus, and these are found to involve the mucous membrane only.

*Small Intestines*.—The mucous membrane is somewhat congested along its whole course, but there is no ulceration.

*Large Intestine*.—Healthy.

*Bladder*.—Healthy.

#### HORSE No. CXVIII.

Grey Australian Gelding, aged 16 years, belonging to the Bombay Tramway Company (No. 128), was purchased on the 14th January 1884. It was admitted into the Infirmary with fever on the 3rd December 1894, and the Surra hæmatozoon was discovered the same day.

December 5th, 1894, 9 A.M.—The horse arrived at the Laboratory Hospital, Poona.

*State on admission*.—The animal is in a very poor condition, and presents a very dull appearance; its head hangs down between the fore-limbs, and it is suffering from the ordinary symptoms of fever. The visible mucous membranes present a faint yellow colour and the right conjunctiva is considerably injected and petechiated; the left is only slightly injected, but the petechiæ are more marked. The sheath is slightly swollen and œdematous, the lower limbs are full, but there is no tenderness on manipulation. The skin is hot and dry, Temp. 40.8° C., the pulse frequent and small, 65, the breathing frequent and somewhat shallow, 35 per minute. The appetite is good, and the fœces present a natural appearance.

| Month and Date. | Temperature °C. |        |        | Pulse.   |      | Respiration. |      | Hæmatozoa in Blood. | Medicine Arsenic (grains.) |      | REMARKS.   |
|-----------------|-----------------|--------|--------|----------|------|--------------|------|---------------------|----------------------------|------|--|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.     | P.M. | A.M.         | P.M. |                     | A.M.                       | P.M. |  |
| 1894.           |                 |        |        |          |      |              |      |                     |                            |      |  |
| December 5...   | 38·7            | 41·6   | 41·9   | 56       | 84   | 24           | 45   | Very numerous.      | ... iiss                   |      | Animal dull. Conjunctivæ yellow with claret-coloured petechiæ. Sheath and hind limbs swollen.                      |
| " 6...          | 38·5            | 38·8   | 39·0   | 48       | 60   | 20           | 20   | Absent              | ... vi                     |      | Right conjunctiva much injected, several petechiæ, left membrana nictitans, seven red extravasations. No appetite. |
| " 7...          | 38·2            | 39·0   | 39·3   | 48       | 52   | 12           | 28   | "                   | ... vi                     | vi   | Do. do. do.  |
| " 8...          | 38·2            | 38·7   | 39·0   | 52       | 52   | 16           | 28   | "                   | ... vi                     |      | Do. do. do.  |
| " 9...          | 38·2            | 38·6   | 38·6   | 52       | 52   | 28           | 24   | "                   | ... vi                     | vi   | Right conjunctiva much injected, small petechiæ, left, orange-coloured and petechiated. Scrotum swollen.           |
| " 10...         | 38·3            | 39·0   | 38·6   | 52       | 56   | 16           | 28   | "                   | ... vi                     | vi   | Do. do. do.  |
| " 11...         | 38·1            | 38·5   | 38·5   | 52       | 52   | 32           | 32   | "                   | ... vi                     |      | Condition unchanged.   |
| " 12...         | 37·5            | 38·3   | 38·4   | 48       | 48   | 20           | 32   | "                   | ... vi                     |      | Do. do.  |
| " 13...         | 37·7            | 38·4   | 38·2   | 48       | 48   | 16           | 24   | "                   | ... vii                    | vii  | Right conjunctiva pale and injected, left, slightly petechiated.   |
| " 14...         | 37·7            | 38·4   | 38·1   | 48       | 48   | 12           | 20   | "                   | ... vii                    | vii  | Do. do. corn refused.  |
| " 15...         | 37·7            | 39·0   | 39·4   | 52       | 60   | 8            | 20   | "                   | ... vii                    | vii  | Do. do.  |
| " 16...         | 38·3            | 39·1   | 40·3   | 48       | 60   | 16           | 32   | "                   | ... vii                    |      | Right conjunctiva orange injected, left, slightly injected.  |
| " 17...         | 39·3            | 40·2   | 39·6   | 48       | 56   | 16           | 40   | "                   | ... vii                    | vii  | Right conjunctiva orange injected, left, slightly injected, and two petechiæ.                                      |
| " 18...         | 37·7            | 38·1   | 38·3   | 44       | 48   | 20           | 32   | "                   | ... vii                    | iv   | Conjunctivæ slightly injected, no petechiæ.  |
| " 19...         | 37·7            | 38·3   | 38·4   | 36       | 48   | 16           | 16   | "                   | ... iv                     | iv   | Conjunctivæ injected. No petechiæ. All corn refused.   |
| " 20...         | 37·7            | 38·5   | 39·0   | 44       | 44   | 20           | 28   | "                   | ... iv                     | iv   | Conjunctivæ injected, left, one extravasation. All corn refused.   |
| " 21...         | 39·1            | 39·8   | 39·6   | 48       | 52   | 16           | 36   | "                   | ... iv                     |      | Do. do.  |
| " 22...         | 38·0            | 38·3   | 39·3   | 36       | 52   | 24           | 28   | "                   | ... vi                     |      | Do. No petechiæ.   |
| " 23...         | 37·7            | 38·4   | 39·0   | 44       | 52   | 28           | 36   | "                   | ... vi                     |      | Right conjunctiva yellow, left, yellow and petechiated; animal rapidly losing flesh.                               |
| " 24...         | 37·7            | 38·6   | 38·8   | 44       | 56   | 24           | 36   | "                   | ... vi                     |      | Conjunctivæ much injected, left, petechiated.  |
| " 25...         | 37·7            | 38·3   | 38·4   | 40       | 40   | 16           | 28   | "                   | ... vi                     |      | Right conjunctiva clearer, left, three petechiæ.   |
| " 26...         | 37·7            | 38·0   | 38·5   | 40       | 44   | 20           | 24   | "                   | ... vi                     |      | Right conjunctiva clearer, left, yellow and petechiated.   |
| " 27...         | 37·8            | 38·1   | 38·5   | 40       | 44   | 12           | 24   | "                   | ... vi                     |      | Conjunctivæ clear.   |
| " 28...         | 39·3            | 39·5   | 39·4   | 44       | 52   | 20           | 24   | "                   | ... vi                     |      | Both conjunctivæ orange and petechiated.   |
| " 29...         | 39·1            | 40·0   | 40·0   | 60       | 64   | 20           | 24   | "                   | ... vi                     |      | Do. All corn refused.  |
| " 30...         | 41·1            | 40·3   | 40·1   | 104      | 98   | 32           | 40   | "                   | ... vi                     |      | Do. do.  |
| " 31...         |                 |        |        | Death at |      | 6·30         | A.M. |                     |                            |      |  |

30th December 1894.—Autopsy five hours after death.

The body is fairly nourished. There is some swelling and œdema of the lower extremities, but an entire absence of it from the under-surface of the belly.

*Thorax*.—The pleural cavities contain a certain quantity of a turbid, sherry-coloured fluid.

*Lungs*.—All of a reddish pink colour and are fully distended with air; there are a few small calcareous nodules dotted over the surface of the organs, but no petechiæ.

The *pericardial* sac contains a few drachms of an orange-coloured fluid.

*Heart*.—Weighs 6 lbs. 11 ozs. Externally there is nothing pathological to notice. The cavities of the right side of the organ contain a considerable quantity of dark semi-fluid blood; there are no sub-endocardial petechiæ. The cavities of the left side also contain a small amount of clot. There are a few petechiæ over the base of the *musculi papillares*. The valves are healthy.



The peritoneal cavity is free from fluid.

*Liver*.—Weighs 13 lbs. 14 ozs. Glisson's capsule is somewhat thickened and opaque in patches, and there are a few calcareous beads dotted over the surface of the organ. On section the large vessels are found to contain much blood, but the tissue on examination appears to be normal.

*Spleen*.—Weighs 1 lb. 13½ ozs., firm on section, and contains little or no blood.

*Kidneys*.—Right weighs 1 lb. 7 ozs., left weighs 1 lb. 5¼ ozs. The capsules are easily separated, surface smooth; the superficial veins are rather distended with blood, but there are no petechiæ visible. On section the cortical portion of both organs presents a vertical striation, dark red in colour, alternating with a dull white. The medullary substance is pale.

*Stomach*.—The organ is somewhat contracted. The cuticular portion is healthy in appearance. There is a small *Spiroptera* tumour, an inch in diameter, occupying a portion midway between the cuticular limit and the pylorus; otherwise the mucous membrane of the villous portion is healthy in appearance.

*Intestines*.—The mucous membranes of the small and large intestines present a normal appearance.

*Bladder*.—Healthy.

### HORSE No. CXIX.

Chestnut Herati Gelding, aged 8 years, belonging to the Bombay Tramway Company (No. 822), was bought on the 21st January 1891, and has hardly ever been in the hospital. Has been working as a helping horse on the Carnac Bridge. It was admitted into the Infirmary with fever on the 3rd December 1894 and the hæmatozoon of Surra was discovered on the 4th.

December 6th, 1894, 9 a.m.—The horse arrived at the Laboratory Hospital, Poona.

*State on admission*.—The animal appears to be in excellent condition, but presents a dull, stupid look. The visible mucous membranes are bright yellow in colour and are injected, both conjunctival membranes being petechiated. The skin is hot. Temp. 40.5° C. There is some eruption (urticaria) on the hind quarters and extremities, more especially in front of the hocks. There is also slight swelling and oedema of the fetlocks, but there is no tenderness on manipulation. The pulse is frequent and thready in character, 60. The respirations somewhat increased in number, 20. The hæmatozoa are very numerous in the blood. The red corpuscles form healthy rouleaux, 7,400,000; white, 10,000 in 1 c.mm., or a ratio of 1 to 740. The appetite is poor. The fæces present a natural appearance.

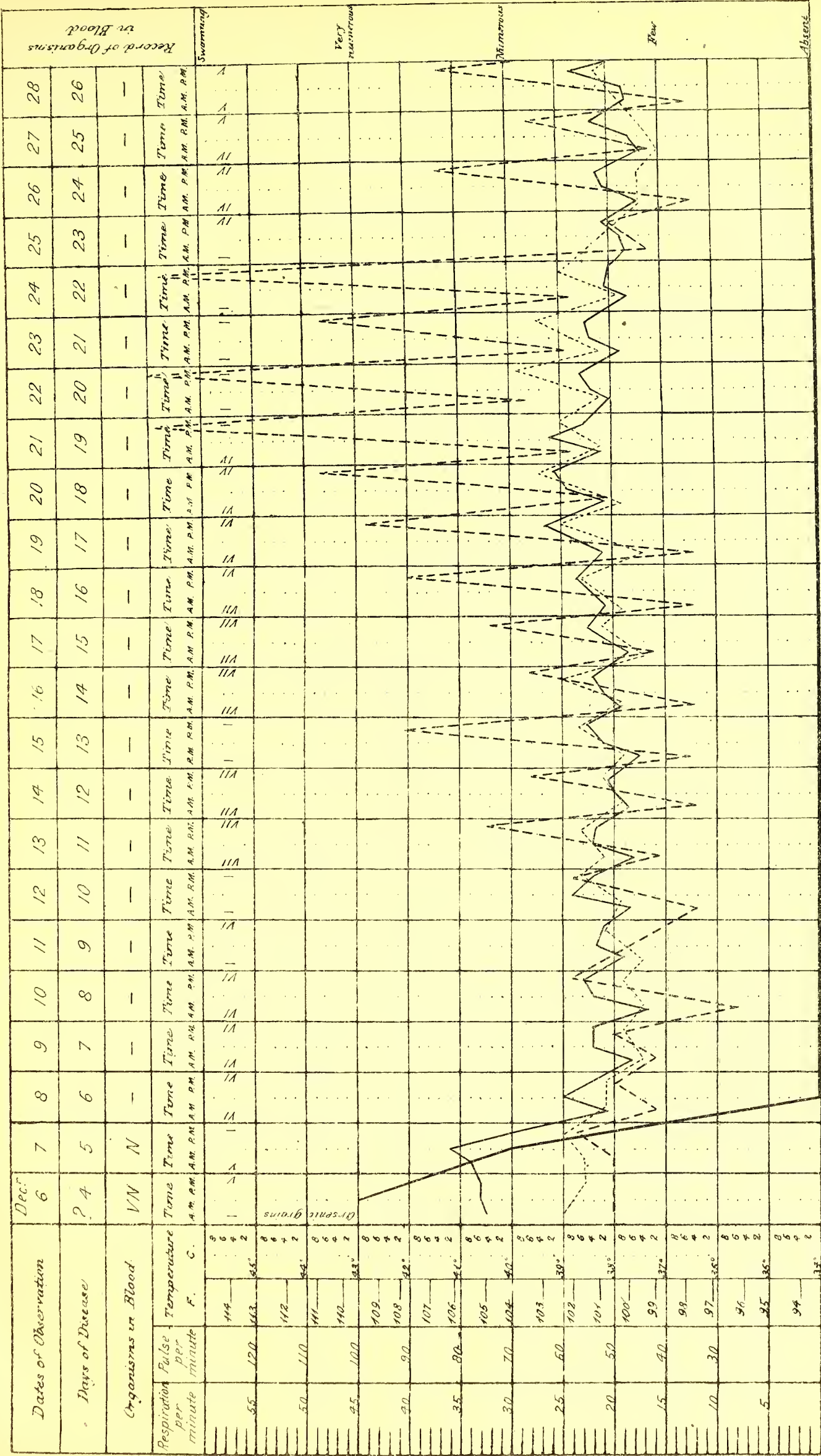
| Month and Date. | Temperature° C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine Arsenic (grains.) |      | REMARKS.   |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------------------------|------|--|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | A.M.                       | P.M. |  |
| 1894.           |                 |        |        |        |      |              |      |                     |                            |      |  |
| December 6 ...  | 40.5            | 40.6   | 40.6   | 60     | 56   | 20           | 20   | Very numerous.      | ...                        | v    | Conjunctivæ orange and petechiated. Appetite poor.                                   |
| " 7 ..          | 40.8            | 41.3   | 40     | 56     | 60   | 20           | 24   | Numerous.           | v                          | ..   | Do. do. Corn and bran refused.   |
| " 8 ...         | 38.1            | 39.0   | 38.4   | 52     | 52   | 16           | 20   | Absent              | vi                         | vi   | Do. do. Animal losing flesh. All four limbs full.                                    |
| " 9 ...         | 37.7            | 38.4   | 38.4   | 44     | 48   | 16           | 20   | "                   | vi                         | vi   | Condition unchanged.   |
| " 10 ...        | 37.3            | 38.3   | 38.5   | 44     | 48   | 8            | 24   | "                   | vi                         | vi   | Do.  |
| " 11 ...        | 37.8            | 38.3   | 38.2   | 44     | 52   | 20           | 16   | "                   | ...                        | vi   | Do.  |
| " 12 ...        | 37.7            | 38.7   | 38.4   | 48     | 56   | 12           | 24   | "                   | ...                        | ...  | Do.  |
| " 13 ...        | 37.6            | 38.4   | 38.3   | 52     | 56   | 16           | 32   | "                   | vii                        | vii  | Conjunctivæ orange injected.   |
| " 14 ...        | 37.7            | 38.0   | 38.1   | 48     | 52   | 12           | 28   | "                   | vii                        | vii  | Do.  |
| " 15 ...        | 37.5            | 38.2   | 38.5   | 48     | 56   | 12           | 40   | "                   | ...                        | ...  | Do. 4 lbs. gram taken.   |
| " 16 ...        | 37.8            | 38.2   | 38.4   | 48     | 60   | 12           | 28   | "                   | vii                        | vii  | Right conjunctiva clear, left, orange; 6 lbs. gram taken.                            |
| " 17 ...        | 37.7            | 38.1   | 38.5   | 44     | 52   | 16           | 32   | "                   | vii                        | vii  | Right conjunctiva injected, left, clearer; 6 lbs. gram taken.                        |
| " 18 ...        | 38.1            | 38.5   | 38.7   | 48     | 56   | 12           | 40   | "                   | vii                        | vi   | Conjunctivæ injected.  |
| " 19 ...        | 38.2            | 38.6   | 39.3   | 44     | 60   | 12           | 44   | "                   | vi                         | vi   | Conjunctivæ orange and much injected. Animal dull, refuses food.                     |
| " 20 ...        | 38.1            | 38.8   | 39.1   | 48     | 64   | 20           | 48   | "                   | vi                         | iv   | Conjunctivæ orange and much injected, slight cough.                                  |
| " 21 ...        | 38.2            | 39.2   | 38.5   | 52     | 60   | 24           | 64   | "                   | iv                         | ...  | Do. do.  |
| " 22 ...        | 38.0            | 38.5   | 38.5   | 52     | 68   | 28           | 60   | "                   | ...                        | ...  | Do. do.  |
| " 23 ...        | 37.8            | 38.4   | 38.5   | 52     | 64   | 24           | 48   | "                   | ...                        | ...  | Do. do.  |
| " 24 ...        | 37.7            | 38.1   | 38.0   | 48     | 60   | 24           | 64   | "                   | ...                        | ..   | Conjunctivæ yellow. Sheath and hind limbs swollen. Corn taken more readily.          |
| " 25 ...        | 37.7            | 37.8   | 38.1   | 56     | 48   | 16           | 20   | "                   | ...                        | iv   | Conjunctivæ clear; oedema extending beneath abdomen. Corn taken more readily.        |
| " 26 ...        | 37.4            | 38.1   | 38.2   | 44     | 44   | 12           | 36   | "                   | iv                         | iv   | Conjunctivæ clear; oedema increased. Corn taken more readily.                        |
| " 27 ...        | 37.4            | 37.6   | 38.3   | 40     | 44   | 16           | 28   | "                   | iv                         | v    | Conjunctivæ clear; oedema increased to 6 inches from chest. Corn taken more readily. |
| " 28 ...        | 37.6            | 37.7   | 38.6   | 48     | 52   | 12           | 36   | "                   | v                          | v    | Conjunctivæ clear; oedema unchanged.   |
| " 29 ...        | 37.4            | 38.1   | 38.3   | 44     | 48   | 16           | 32   | "                   | v                          | vi   | Do. but injected; oedema increased.  |
| " 30 ...        | 37.4            | 38.1   | 38.3   | 44     | 52   | 12           | 28   | "                   | vi                         | vi   | Do. near hind fetlock swollen.   |
| " 31 ...        | 37.4            | 38.7   | 38.3   | 44     | 48   | 12           | 40   | "                   | vi                         | vii  | Do.  |



Chart I

RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Horse No CXIX - Hospital - Bombay Tramway Company      Sex Gelding      Colour Chestnut  
Disease Surra naturally contracted      Date of Attack 4th December 1894      Result Dead      Age 8      Registrar No CXIX      Ward





Horse No CXIX      Age 8      Sex Gelding      Colour Chestnut

Disease Surra Naturally contracted      Date of Attack      Result      Date of Result      Register No CXIX      Ward

Horse No. CXIX

| Disease | Surra Naturally contracted | Date of Attack | Result | Register No | CXIX | Word |
|---------|----------------------------|----------------|--------|-------------|------|------|
|         |                            |                |        |             |      |      |

[illegible]

| Temperature | Pulse | Respiration |
|-------------|-------|-------------|
| 20          | 100   | 10          |
| 25          | 120   | 15          |
| 30          | 140   | 20          |
| 35          | 160   | 25          |
| 40          | 180   | 30          |
| 45          | 200   | 35          |
| 50          | 220   | 40          |
| 55          | 240   | 45          |
| 60          | 260   | 50          |
| 65          | 280   | 55          |
| 70          | 300   | 60          |
| 75          | 320   | 65          |
| 80          | 340   | 70          |
| 85          | 360   | 75          |
| 90          | 380   | 80          |
| 95          | 400   | 85          |
| 100         | 420   | 90          |





## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Horse No. CXIX-

*Disease. Surra Naturally Contracted.*

Date of Attack

Result.

Date of Result: \_\_\_\_\_

Register No. CXIX

Ward.

Page 8.

Dear

Gelding-

Colour. Chestnut.

[illegible]

Temperature  
Haematozoa

Pulse  
Respiration

Drawn & Litho. Govt. Photodupl. Office, Poona 1895.





## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Horse No CXIX

Age 8 Sex Gelding Colour Chestnut

*Disease Surra Naturally contracted.*

Date of Attack

Result

*Date of Result.*

Register No. CXIX — Ward

Ward \_\_\_\_\_

[illegible]

Temperature

Pulse \_\_\_\_\_  
Respiration \_\_\_\_\_

*Dryden & Latho Govt Photographic Office Dec 1895.*



RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Horse No CXIX      Age 8      Sex Gelding      Colour Chestnut      Disease Surra Naturally Contracted      Date of Attack      Result      Date of Result      Register No CXIX      Word

| Dates of Observation    |                   | March         |               |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |  |  |
|-------------------------|-------------------|---------------|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|--|
|                         |                   | 8             | 9             | 10      | 11      | 12      | 13      | 14      | 15      | 16      | 17      | 18      | 19      | 20      | 21      | 22      | 23      | 24      | 25      | 26      | 27      | 28      | 29      | 30      |         |  |  |
| Days of Disease         |                   | 96            | 97            | 98      | 99      | 100     | 101     | 102     | 103     | 104     | 105     | 106     | 107     | 108     | 109     | 110     | 111     | 112     | 113     | 114     | 115     | 116     | 117     | 118     |         |  |  |
| Organisms in Flood      |                   |               |               |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |  |  |
| Respiration per minute. | Pulse per minute. | Temperature F | Temperature C | Time AM | Time PM | Time AM | Time PM | Time AM | Time PM | Time AM | Time PM | Time AM | Time PM | Time AM | Time PM | Time AM | Time PM | Time AM | Time PM | Time AM | Time PM | Time AM | Time PM | Time AM | Time PM |  |  |
|                         |                   | 114           | 41            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
| 55                      | 120               | 112           | 41            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
| 50                      | 110               | 111           | 41            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
| 45                      | 100               | 110           | 41            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
| 40                      | 90                | 109           | 41            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
| 35                      | 80                | 108           | 42            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
| 30                      | 70                | 107           | 41            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
| 25                      | 60                | 106           | 41            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
| 20                      | 50                | 105           | 40            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
| 15                      | 40                | 104           | 39            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
| 10                      | 30                | 103           | 38            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
| 5                       | 20                | 102           | 37            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
|                         |                   | 101           | 36            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
|                         |                   | 100           | 35            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
|                         |                   | 99            | 34            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
|                         |                   | 98            | 33            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
|                         |                   | 97            | 32            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
|                         |                   | 96            | 31            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
|                         |                   | 95            | 30            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |
|                         |                   | 94            | 29            | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       | 4       |         |  |  |

Record of Organisms in Blood  
Swarming  
Very numerous  
Numerous  
Few  
Absent

Temperature \_\_\_\_\_  
Pulse \_\_\_\_\_  
Respiration \_\_\_\_\_  
Hamatozoa \_\_\_\_\_

Drawn with Hot Phosphoric Acid Paper 1895.











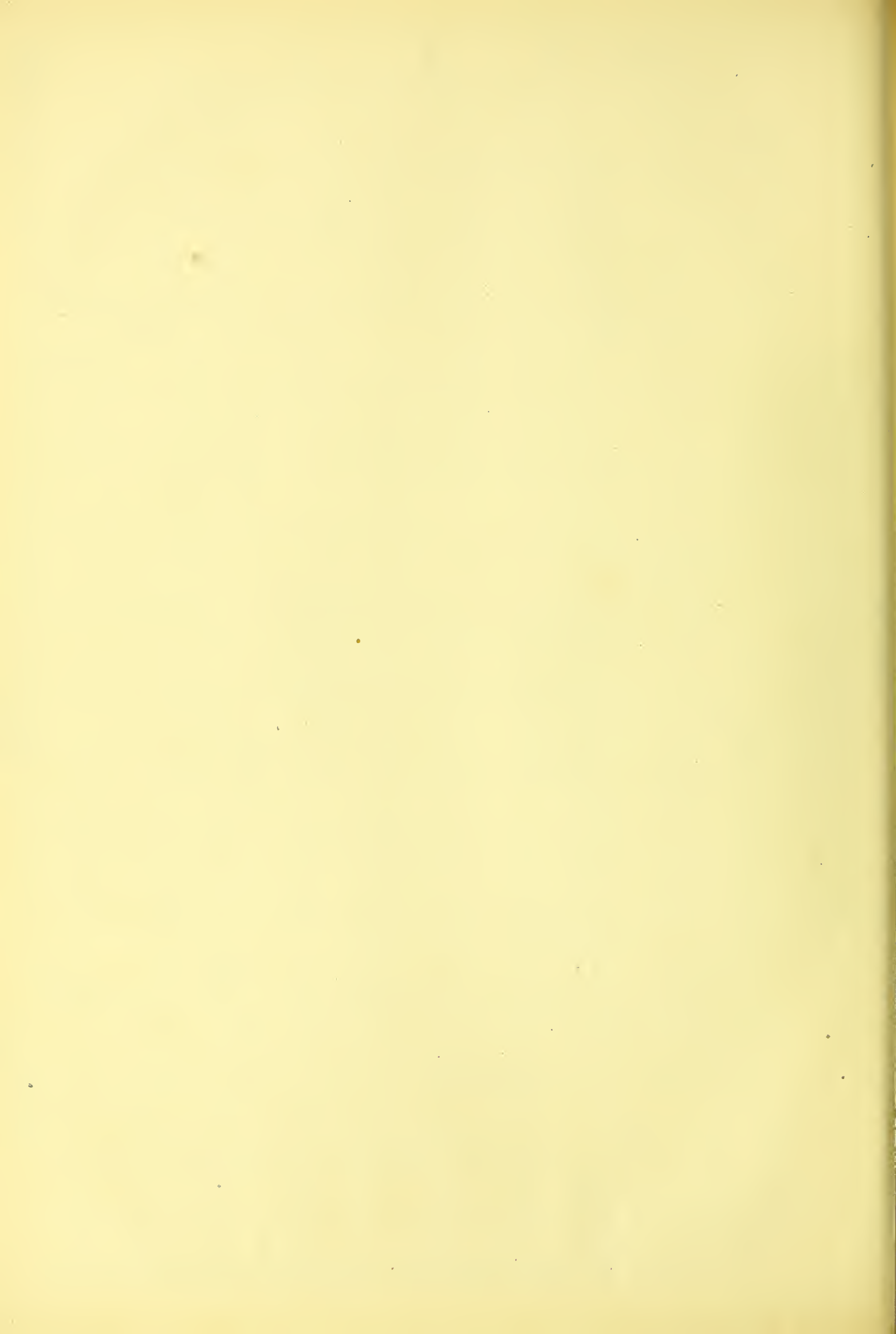
RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Horse No. CXIX      Age 8      Sex Gelding      Colour Chestnut      Ward       
Disease Surra Naturally Contracted      Date of Attack Organism first looked for and found 4th Dec. 1894      Date of Result Register No. CXIX

| Dates of Observation.  |                  | April       |  | May     |  | 1    |  | 2    |  | 3    |  | 4    |  | 5    |  | 6    |  | 7    |  | 8    |  | 9    |  | 10   |  | 11   |  | 12   |  | 13   |  | 14   |  | 15   |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |
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| Days of Disease        |                  | 142         |  | 143     |  | 144  |  | 145  |  | 146  |  | 147  |  | 148  |  | 149  |  | 150  |  | 151  |  | 152  |  | 153  |  | 154  |  | 155  |  | 156  |  | 157  |  | 158  |  | 159  |  | 160  |  | 161  |  | 162  |  | 163  |  | 164  |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |
| Organisms in Blood     |                  | F 4 inf     |  | F 2 inf |  | —    |  | —    |  | —    |  | —    |  | —    |  | —    |  | —    |  | —    |  | —    |  | —    |  | —    |  | —    |  | —    |  | —    |  | —    |  | —    |  | —    |  | —    |  | —    |  | —    |  | —    |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |
| Respiration per minute | Pulse per minute | Temperature |  | Time    |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  |

Temperature           Respiration           Pulse       
Hamatozoa     

Drawn & Litho. Cont. Photodup. Office, Poona 1895



## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Horse (Herati No 822) Hospital. Bombay Tramway Company

Age 8 Sex Gelding

Colour Chestnut

Disease Surra (Naturally Contracted) Date of Attack, 4-12-94 Result Death Date of Result 2-7-95 Register No CXIX Ward

| Dates of Observation.         |                         |                   |                   | May 1895  | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    | 25    | 26    | 27    | 28    | 29    | 30    | 31    | June 1 | 2     | 3     | 4     | 5     | 6     | 7     |
|-------------------------------|-------------------------|-------------------|-------------------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| Days of Disease               |                         |                   |                   | 165   | 166   | 167   | 168   | 169   | 170   | 171   | 172   | 173   | 174   | 175   | 176   | 177   | 178   | 179   | 180   | 181   | 182    | 183   | 184   | 185   | 186   | 187   |       |
| Organisms in Blood.           |                         |                   |                   | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
| Respiration<br>per<br>minute. | Pulse<br>per<br>minute. | Temperature<br>F. | Temperature<br>C. | Time.   | Time. | Time. | Time. | Time. | Time. | Time. | Time. | Time. | Time. | Time. | Time. | Time. | Time. | Time. | Time. | Time. | Time.  | Time. | Time. | Time. | Time. | Time. | Time. |
| 55                            | 120                     | 113               | 45°               | VI  | VI    | VI    | XI    | XI    | XI    | XI    | XI    | XI    | XI    | XI    | XI    | XI    | XI    | XI    | XI    | XI    | XI     | XI    | XI    | XI    | XI    | XI    |       |
| 50                            | 110                     | 111               | 44°               | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
| 45                            | 100                     | 110               | 43°               | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
| 40                            | 90                      | 109               | 42°               | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
| 35                            | 80                      | 108               | 41°               | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
| 30                            | 70                      | 107               | 40°               | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
| 25                            | 60                      | 106               | 39°               | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
| 20                            | 50                      | 105               | 38°               | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
| 15                            | 40                      | 104               | 37°               | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
| 10                            | 30                      | 103               | 36°               | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
| 5                             |                         | 102               | 35°               | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
|                               |                         | 101               |                   | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
|                               |                         | 100               |                   | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
|                               |                         | 99                |                   | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
|                               |                         | 98                |                   | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
|                               |                         | 97                |                   | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
|                               |                         | 96                |                   | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
|                               |                         | 95                |                   | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
|                               |                         | 94                |                   | —   | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —      | —     | —     | —     | —     | —     |       |
|                               |                         |                   |                   | Fram May 16th until Death 2nd July 1895 this animal was under observation at the Sangam Veterinary Hospital Pond. |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |
|                               |                         |                   |                   | Absent.   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |

Drawn &amp; Litho. Govt Photodupl. Office, Poona 1895.

Temperature \_\_\_\_\_ Pulse \_\_\_\_\_

Hamatozoan \_\_\_\_\_ Respirations \_\_\_\_\_

From May 16th until Death 2nd July 1895 this animal was under observation at the Sangam Veterinary Hospital Poona.

Absent





## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Horse (Herati No 822) Hospital. Bombay Tramway Co.

Age 8-

Sex Gelding

Colour Chestnut

Disease Surra (Naturally Contracted) Date of Attack 4-12-94-

Date of Result 2-7-95

Register No. CXIX Ward

[illegible]

Temperature.  
Hæmatocrit.

[illegible]

•

•

*Drawn and Litho Govt. Photographic Office. Poona 1895.*

Horse(Herati N<sup>s</sup>  
Disease Surra)

| Dates of Obser                |                         | Days of Di |  |
|-------------------------------|-------------------------|------------|--|
| Organisms in L                |                         |            |  |
| Respiration<br>per<br>minute. | Pulse<br>per<br>minute. | Te         |  |
|                               |                         | 114        |  |
| 55                            | 120                     | 113        |  |
|                               |                         | 112        |  |
| 50                            | 110                     | 111        |  |
|                               |                         | 110        |  |
| 45                            | 100                     | 109        |  |
|                               |                         | 108        |  |
| 40                            | 90                      | 107        |  |
|                               |                         | 106        |  |
| 35                            |                         | 105        |  |
|                               |                         | 104        |  |
| 30                            | 70                      | 103        |  |
|                               |                         | 102        |  |
| 25                            | 60                      | 101        |  |
|                               |                         | 100        |  |
| 20                            | 50                      | 99         |  |
|                               |                         | 98         |  |
| 15                            | 40                      | 97         |  |
|                               |                         | 96         |  |
| 10                            | 30                      | 95         |  |
|                               |                         | 94         |  |
| 5                             |                         |            |  |
|                               |                         |            |  |



| Month and Date. |        | Temperature. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Medicine<br>Arsenic<br>(grains.)         |      | REMARKS.  |
|-----------------|--------|--------------|--------|--------|--------|------|--------------|------|------------------------|--|------|---|
|                 |        | A.M.         | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | A.M.                                     | P.M. |   |
| 1895.           |        |              |        |        |        |      |              |      |                        |  |      |   |
| January         | 1 ...  | 37.2         | 38.5   | 38.3   | 40     | 44   | 12           | 20   | Absent                 | A.M.                                     | P.M. | Conjunctivæ dirty yellow. No petechiæ.  |
| "               | 2 ...  | 37.4         | 38.1   | 38.5   | 36     | 48   | 12           | 44   |                        | vii                                      | vii  | Do. do.   |
| "               | 3 ...  | 37.4         | 38.0   | 38.3   | 36     | 40   | 16           | 32   |                        | vii                                      | vii  | Do. do.   |
| "               | 4 ...  | 37.8         | 37.8   | 38.3   | 36     | 44   | 16           | 20   |                        | vii                                      | vii  | Conjunctivæ clearer. No petechiæ.<br>Gram substituted for barley, hay and<br>30 lbs. lucerne taken daily. |
| "               | 5 ...  | 37.4         | 37.8   | 38.4   | 36     | 40   | 12           | 20   | "                      | vii                                      | vii  | Do. do.   |
| "               | 6 ...  | 37.4         | 38.0   | 38.4   | 36     | 44   | 12           | 20   | "                      | vii                                      | vii  | Conjunctivæ deeply injected. Gram<br>substituted for barley, hay and 30 lbs.<br>lucerne taken daily.      |
| "               | 7 ...  | 37.6         | 38.3   | 38.6   | 36     | 40   | 16           | 40   | "                      | vii                                      | vii  | Do. do.   |
| "               | 8 ...  | 38.2         | 39.0   | 39.0   | 44     | 48   | 16           | 36   | "                      | vii                                      | vii  | Do. do.   |
| "               | 9 ...  | 38.4         | 39.0   | 39.0   | 44     | 52   | 16           | 40   | "                      | vii                                      | vii  | Conjunctivæ deeply injected.  |
| "               | 10 ... | 38.1         | 38.8   | 39.1   | 48     | 58   | 12           | 44   | "                      | vii                                      | vii  | Do.   |
| "               | 11 ... | 37.3         | 38.4   | 38.6   | 48     | 60   | 8            | 45   | "                      | vi                                       | vi   | Do.   |
| "               | 12 ... | 37.6         | 38.2   | 38.4   | 50     | 60   | 9            | 33   | "                      | v  | v    | Do.   |
| "               | 13 ... | 37.7         | 38.3   | 38.3   | 52     | 56   | 10           | 16   | "                      | v  | v    | Do.   |
| "               | 14 ... | 37.9         | 38.3   | 38.4   | 46     | 56   | 18           | 18   | "                      | iv                                       | iii  | Do.   |
| "               | 15 ... | 37.2         | 38.3   | 38.8   | 52     | 56   | 10           | 48   | "                      | iii                                      | iii  | Do.   |
| "               | 16 ... | 37.7         | 38.6   | 38.7   | 44     | 60   | 14           | 48   | "                      | iii                                      | iii  | Do. œdema beneath<br>abdomen decreased.   |
| "               | 17 ... | 37.8         | 38.3   | 38.6   | 46     | 56   | 16           | 44   | "                      | iii                                      | iii  | Conjunctivæ less injected.  |
| "               | 18 ... | 37.6         | 38.0   | 38.5   | 44     | 52   | 12           | 40   | "                      | iii                                      | iii  | Do.   |
| "               | 19 ... | 37.8         | 38.2   | 38.6   | 48     | 56   | 16           | 44   | "                      | iii                                      | iii  | Conjunctivæ injected ; œdema lessened.  |
| "               | 20 ... | 37.7         | 38.3   | 38.4   | 44     | 48   | 16           | 44   | "                      | iii                                      | iii  | Do. œdema slightly<br>increased, penis swollen.   |
| "               | 21 ... | 37.4         | 38.0   | 38.0   | 40     | 48   | 16           | 32   | "                      | iii                                      | iii  | Do. do.   |
| "               | 22 ... | 37.0         | 37.8   | 38.2   | 40     | 44   | 12           | 24   | "                      | iii                                      | iii  | Condition unchanged.  |
| "               | 23 ... | 37.1         | 37.9   | 38.3   | 40     | 44   | 12           | 28   | "                      | iii                                      | iii  | Do.   |
| "               | 24 ... | 37.3         | 38.0   | 38.5   | 36     | 48   | 12           | 28   | "                      | iii                                      | iii  | Conjunctivæ less injected.  |
| "               | 25 ... | 37.1         | 37.7   | 38.3   | 36     | 40   | 12           | 24   | "                      | iii                                      | iii  | Do.   |
| "               | 26 ... | 37.1         | 37.9   | 38.3   | 32     | 40   | 12           | 40   | "                      | iii                                      | iii  | Conjunctivæ yellow and injected.  |
| "               | 27 ... | 37.7         | 38.0   | 38.2   | 40     | 40   | 12           | 36   | "                      | iii                                      | iii  | Do. do.   |
| "               | 28 ... | 37.4         | 38.2   | 38.3   | 36     | 36   | 12           | 40   | "                      | iii                                      | iii  | Do. do.   |
| "               | 29 ... | 37.3         | 38.1   | 38.4   | 32     | 44   | 12           | 24   | "                      | iii                                      | ii   | Do. do.   |
| "               | 30 ... | 37.4         | 38.0   | 38.5   | 28     | 36   | 12           | 40   | "                      | ii                                       | ii   | Do. do.   |
| "               | 31 ... | 37.0         | 37.7   | 38.2   | 28     | 36   | 24           | 12   | "                      | ii                                       | ii   | Do. do.   |
| February        | 1 ...  | 37.3         | 38.0   | 38.4   | 36     | 36   | 12           | 20   | "                      | ii                                       | ii   | Right conjunctiva injected, left, clearer ;<br>œdema almost disappeared.                                  |
| "               | 2 ...  | 36.9         | 37.9   | 38.2   | 32     | 40   | 12           | 16   | "                      | ii                                       | ii   | Conjunctivæ clearer.  |
| "               | 3 ...  | 36.6         | 37.6   | 38.3   | 32     | 40   | 12           | 20   | "                      | ii                                       | ii   | Do.   |
| "               | 4 ...  | 37.0         | 37.9   | 38.5   | 32     | 36   | 12           | 28   | "                      | ii                                       | ii   | Do.   |
| "               | 5 ...  | 36.9         | 37.7   | 38.5   | 28     | 36   | 12           | 24   | "                      | ii                                       | ii   | Conjunctivæ clear.  |
| "               | 6 ...  | 37.4         | 37.8   | 38.4   | 36     | 40   | 12           | 24   | "                      | ii                                       | ii   | Conjunctivæ slightly yellow and injected.   |
| "               | 7 ...  | 36.8         | 38.0   | 38.3   | 36     | 40   | 12           | 24   | "                      | ii                                       | ii   | Right conjunctiva nearly clear, left, one<br>extravasation.   |
| "               | 8 ...  | 37.1         | 37.9   | 38.3   | 36     | 40   | 12           | 32   | "                      | ii                                       | ii   | Right conjunctiva slightly injected, left,<br>one extravasation, yellow.                                  |
| "               | 9 ...  | 37.4         | 38.8   | 39.0   | 32     | 32   | 8            | 28   | "                      | ii                                       | ii   | Right conjunctiva clear, left, one extra-<br>vasation, yellow.  |
| "               | 10 ... | 37.3         | 37.8   | 38.1   | 32     | 32   | 12           | 16   | "                      | ...                                      | ...  | Right conjunctiva yellow and slightly<br>injected, left, injected.  |
| "               | 11 ... | 37.3         | 37.7   | 38.2   | 28     | 40   | 12           | 12   | "                      | ...                                      | ...  | Conjunctivæ yellow.   |
| "               | 12 ... | 36.8         | 37.6   | 38.3   | 24     | 36   | 12           | 16   | "                      | Pot Nit.<br>... 3ii                      |      | Do.   |
| "               | 13 ... | 37.2         | 37.6   | 38.2   | 28     | 40   | 12           | 20   | "                      | ...                                      | 3ii  | Do.   |
| "               | 14 ... | 37.3         | 38.2   | 38.4   | 28     | 36   | 12           | 32   | "                      | ...                                      | 3ii  | Do.   |
| "               | 15 ... | 37.5         | 38.5   | 39.3   | 32     | 40   | 16           | 36   | "                      | ...                                      | 3ii  | Mucous membranes anæmic, but tinged<br>yellow.  |
| "               | 16 ... | 38.4         | 39.1   | 39.7   | 36     | 40   | 20           | 40   | Few                    | Arsenic.<br>... v 3ii<br>Pot Nit,<br>3ii |      | Do. do.   |
| "               | 17 ... | 38.7         | 39.2   | 39.4   | 44     | 44   | 12           | 28   | Numerous.              | Ars. iv<br>v iv v                        |      | Right conjunctiva bright orange pete-<br>chiated, left, orange.   |
| "               | 18 ... | 38.9         | 39.7   | 39.7   | 36     | 36   | 20           | 32   | "                      | v vi 3ii<br>Grains                       |      | Conjunctivæ orange and petechiated.   |
| "               | 19 ... | 37.8         | 38.4   | 38.1   | 44     | 32   | 16           | 12   | Absent                 | vi                                       | vi   | Do. do.   |
| "               | 20 ... | 37.5         | 38.0   | 37.8   | 28     | 36   | 24           | 16   | "                      | vi                                       | vi   | Conjunctivæ orange. No petechiæ.  |
| "               | 21 ... | 37.3         | 37.6   | 38.1   | 24     | 36   | 12           | 16   | "                      | vi                                       | vi   | Conjunctivæ yellow.   |
| "               | 22 ... | 37.2         | 37.7   | 37.3   | 28     | 36   | 12           | 8    | "                      | vi                                       | vii  | Do.   |
| "               | 23 ... | 37.1         | 37.2   | 37.8   | 28     | 32   | 13           | 16   | "                      | vii                                      | vii  | Conjunctivæ yellow.   |
| "               | 24 ... | 37.1         | 37.5   | 37.7   | 32     | 36   | 12           | 36   | "                      | vii                                      | vii  | Do.   |

| Month and Date. |        | Temperature. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Medicine<br>Arsenic<br>(grains.) |       | REMARKS.  |
|-----------------|--------|--------------|--------|--------|--------|------|--------------|------|------------------------|----------------------------------|-------|---|
|                 |        | A.M.         | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        |                                  |       |   |
| 1895.           |        |              |        |        |        |      |              |      |                        |                                  |       |   |
| February        | 25 ... | 37.3         | 37.7   | 38.5   | 32     | 40   | 12           | 36   | Absent                 | vii                              | vii   | Right conjunctiva slightly petechiated, left, yellow.         |
| "               | 26 ... | 37.8         | 38.2   | 38.2   | 40     | 48   | 20           | 40   | "                      | vii                              | ...   | Right conjunctiva orange and injected, left, yellow.          |
| "               | 27 ... | 37.7         | 38.0   | 38.2   | 40     | 44   | 20           | 40   | "                      | ...                              | ...   | Conjunctivæ orange.   |
| "               | 28 ... | 37.4         | 37.8   | 38.0   | 44     | 48   | 12           | 44   | "                      | ...                              | ...   | Conjunctivæ yellow.   |
| March           | 1 ...  | 37.4         | 37.9   | 38.1   | 44     | 44   | 24           | 40   | "                      | ...                              | ...   | Do.   |
| "               | 2 ...  | 37.2         | 38.0   | 38.2   | 40     | 38   | 16           | 36   | "                      | ...                              | ...   | Do.   |
| "               | 3 ...  | 37.3         | 37.9   | 38.2   | 32     | 40   | 12           | 48   | "                      | ...                              | ...   | Conjunctivæ clear.  |
| "               | 4 ...  | 37.4         | 38.1   | 38.5   | 32     | 52   | 20           | 40   | "                      | iv                               | vi    | Right conjunctiva injected, left, yellow.                     |
| "               | 5 ...  | 37.5         | 38.0   | 38.1   | 32     | 36   | 24           | 40   | "                      | v                                | v     | Conjunctivæ yellow.   |
| "               | 6 ...  | 37.2         | 38.0   | 38.2   | 48     | 48   | 12           | 28   | "                      | v                                | v     | Right conjunctiva yellow and injected, left, yellow.          |
| "               | 7 ...  | 37.5         | 37.9   | 38.1   | 44     | 44   | 24           | 28   | "                      | v                                | v     | Do. do.   |
| "               | 8 ...  | 37.7         | 38.2   | 37.9   | 48     | 48   | 32           | 32   | "                      | v                                | v     | Conjunctivæ less yellow.                                      |
| "               | 9 ...  | 38.1         | 38.3   | 38.1   | 40     | 48   | 24           | 28   | "                      | v                                | v     | Conjunctivæ clearer. Sheath swollen.                          |
| "               | 10 ... | 37.5         | 38.1   | 38.0   | 36     | 44   | 20           | 20   | "                      | vi                               | vii   | Conjunctivæ clear; sheath swollen, œdema beneath chest.       |
| "               | 11 ... | 37.5         | 38.2   | 38.2   | 36     | 32   | 16           | 24   | "                      | vii                              | vii   | Conjunctivæ clear; œdema increased.                           |
| "               | 12 ... | 37.5         | 38.2   | 38.2   | 40     | 48   | 20           | 20   | "                      | vii                              | vii   | Conjunctivæ slightly pallid; œdema unchanged.                 |
| "               | 13 ... | 37.6         | 38.1   | 38.1   | 52     | 48   | 28           | 28   | "                      | vii                              | vii   | Conjunctivæ clear do.   |
| "               | 14 ... | 37.6         | 38.2   | 38.0   | 44     | 56   | 16           | 32   | "                      | vii                              | vii   | Do. left slightly yellow, œdema lessened.                     |
| "               | 15 ... | 37.6         | 38.0   | 37.8   | 40     | 48   | 20           | 28   | "                      | vii                              | vii   | Do. do.   |
| "               | 16 ... | 37.4         | 37.8   | 37.7   | 40     | 56   | 20           | 24   | "                      | vii                              | vii   | Do. do.   |
| "               | 17 ... | 37.4         | 37.7   | 37.9   | 44     | 44   | 20           | 24   | "                      | ...                              | ...   | Do. œdema much reduced.                                       |
| "               | 18 ... | 37.5         | 37.7   | 37.9   | 48     | 48   | 40           | 20   | "                      | ...                              | ...   | Right conjunctiva clear, left, slightly injected.             |
| "               | 19 ... | 37.3         | 37.8   | 37.8   | 48     | 44   | 16           | 28   | "                      | ...                              | ...   | Right conjunctiva slightly injected, left, one extravasation. |
| "               | 20 ... | 37.2         | 38.0   | 37.6   | 36     | 44   | 16           | 16   | "                      | ...                              | ...   | Conjunctivæ clear.  |
| "               | 21 ... | 37.1         | 38.2   | 37.8   | 36     | 44   | 16           | 24   | "                      | ...                              | ...   | Do.   |
| "               | 22 ... | 37.4         | 38.0   | 37.7   | 40     | 44   | 16           | 32   | "                      | ...                              | ...   | Do. animal brighter.  |
| "               | 23 ... | 37.3         | 37.8   | 37.8   | 36     | 36   | 20           | 24   | "                      | ...                              | ...   | Do. do.   |
| "               | 24 ... | 37.6         | 38.1   | 37.7   | 32     | 40   | 20           | 20   | "                      | ...                              | ...   | Do.   |
| "               | 25 ... | 37.4         | 38.0   | 37.8   | 36     | 36   | 36           | 24   | "                      | ...                              | ...   | Do.   |
| "               | 26 ... | 37.4         | 38.0   | 37.7   | 32     | 36   | 32           | 36   | "                      | ...                              | ...   | Do.   |
| "               | 27 ... | 37.5         | 38.2   | 37.8   | 36     | 32   | 24           | 28   | "                      | ...                              | ...   | Do.   |
| "               | 28 ... | 37.5         | 37.8   | 37.8   | 28     | 32   | 20           | 28   | "                      | ...                              | ...   | Do.   |
| "               | 29 ... | 37.5         | 38.1   | 37.9   | 32     | 36   | 20           | 20   | "                      | ...                              | ...   | Do.   |
| "               | 30 ... | 37.6         | 37.9   | 37.7   | 32     | 36   | 24           | 28   | "                      | ...                              | ...   | Do.   |
| "               | 31 ... | 37.4         | 38.0   | 38.2   | 36     | 40   | 16           | 28   | "                      | ...                              | ...   | Do.   |
| April           | 1 ...  | 37.7         | 38.3   | 38.0   | 32     | 36   | 16           | 24   | "                      | ...                              | iv    | Do.   |
| "               | 2 ...  | 38.1         | 38.6   | 38.5   | 32     | 36   | 16           | 24   | "                      | iv                               | v     | Do.   |
| "               | 3 ...  | 39.0         | 39.8   | 39.5   | 36     | 40   | 20           | 24   | "                      | v                                | vi    | Conjunctivæ faintly yellow.                                   |
| "               | 4 ...  | 39.5         | 39.6   | 39.5   | 40     | 36   | 16           | 28   | "                      | vi                               | vii   | Do.   |
| "               | 5 ...  | 37.8         | 38.8   | 38.2   | 76     | ...  | 24           | ...  | "                      | vii                              | vii   | Right conjunctiva slightly injected, left, clear.             |
| "               | 6 ...  | 37.6         | 38.5   | 38.3   | 32     | 40   | 16           | 24   | "                      | vii                              | vii   | Right conjunctiva slightly injected, left, clear.             |
| "               | 7 ...  | 37.4         | 38.2   | 38.2   | 36     | 36   | 16           | 24   | "                      | vii                              | vii   | Conjunctivæ clear.  |
| "               | 8 ...  | 37.6         | 38.3   | 38.0   | 32     | 36   | 20           | 24   | "                      | vi                               | vi    | Do.   |
| "               | 9 ...  | 37.8         | 38.0   | 38.0   | 40     | 40   | 20           | 20   | "                      | v                                | v     | Do.   |
| "               | 10 ... | 37.6         | 38.1   | 37.8   | 36     | 36   | 20           | 28   | "                      | iv                               | iv    | Do.   |
| "               | 11 ... | 37.5         | 37.8   | 37.8   | 32     | 36   | 20           | 20   | "                      | iv                               | iv    | Do.   |
| "               | 12 ... | 37.4         | 38.0   | 37.8   | 40     | 44   | 20           | 20   | "                      | iv                               | iv    | Do.   |
| "               | 13 ... | 37.6         | 37.8   | 37.7   | 40     | 40   | 20           | 20   | "                      | iv                               | iv    | Right conjunctiva injected, left, clear.                      |
| "               | 14 ... | 37.0         | 37.8   | 37.8   | 36     | 36   | 16           | 20   | "                      | iv                               | iv    | Conjunctivæ clear.  |
| "               | 15 ... | 37.8         | 38.0   | 37.9   | 40     | 48   | 24           | 36   | "                      | iv                               | iv    | Do.   |
| "               | 16 ... | 37.7         | 38.0   | 37.9   | 36     | 40   | 28           | 20   | "                      | iv                               | iv    | Do.   |
| "               | 17 ... | 37.6         | 38.1   | 37.9   | 40     | 36   | 24           | 24   | "                      | iv                               | iv    | Do.   |
| "               | 18 ... | 37.8         | 38.5   | 38.0   | 32     | 40   | 24           | 24   | "                      | iv                               | iv    | Do.   |
| "               | 19 ... | 37.6         | 38.2   | 38.1   | 40     | 32   | 28           | 24   | "                      | iv                               | iv    | Do.   |
| "               | 20 ... | 37.6         | 38.5   | 38.1   | 32     | 40   | 20           | 28   | "                      | iv                               | iv    | Do.   |
| "               | 21 ... | 38.0         | 38.8   | 38.4   | 36     | 44   | 24           | 28   | Few                    | iv                               | ii iv | Right conjunctiva pallid, left, clear.                        |
| "               | 22 ... | 38.3         | 39.0   | 39.1   | 32     | 56   | 24           | 32   | "                      | vi                               | vi    | Conjunctivæ faintly yellow.                                   |
| "               | 23 ... | 38.6         | 39.3   | 39.2   | 40     | 48   | 32           | 36   | "                      | vii                              | vii   | Right conjunctiva yellow and injected, left, yellow.          |
| "               | 24 ... | 38.5         | 39.3   | 38.5   | 36     | 48   | 28           | 40   | "                      | vii                              | vii   | Do. do.   |
| "               | 25 ... | 38.1         | 38.2   | 38.1   | 36     | 52   | 36           | 20   | Absent                 | vii                              | vii   | Do. do.   |
| "               | 26 ... | 37.7         | 38.0   | 38.0   | 32     | 44   | 23           | 24   | "                      | vii                              | vii   | Conjunctivæ clear.  |
| "               | 27 ... | 37.6         | 38.0   | 38.0   | 36     | 44   | 32           | 20   | "                      | vii                              | vii   | Do.   |



| Month and Date. |       | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Medicine<br>Arsenic<br>(Grains.) |      | REMARKS.   |
|-----------------|-------|-----------------|--------|--------|--------|------|--------------|------|------------------------|----------------------------------|------|--|
|                 |       | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | A.M.                             | P.M. |  |
| 1895.           |       |                 |        |        |        |      |              |      |                        |                                  |      |  |
| April           | 28... | 37.6            | 37.8   | 37.9   | 36     | 36   | 32           | 32   | Absent.                | vii                              | viii | On the removal of the Laboratory from<br>Poona, Bombay, to Muktesar, North-<br>West Provinces, this animal was trans-<br>ferred to the Sangam Veterinary<br>Hospital, Poona, under the supervision<br>of Mr. Judah Hyam, to continue the<br>treatment. |
| "               | 29... | 37.6            | 38.0   | 37.8   | 36     | 40   | 28           | 24   |                        | viii                             | viii |  |
| "               | 30... | 37.4            | 37.8   | 37.7   | 36     | 40   | 24           | 24   |                        | viii                             | viii |  |
| May             | 1...  | 37.5            | 38.1   | 37.8   | 40     | 48   | 36           | 28   | "                      | viii                             | viii |  |
| "               | 2...  | 37.7            | 38.1   | 37.9   | 44     | 38   | 28           | 27   |                        | viii                             | ...  |  |
| "               | 3...  | 37.8            | 38.3   | 37.8   | 48     | 44   | 32           | 32   |                        | ...                              | ...  |  |
| "               | 4...  | 37.7            | 38.0   | 37.8   | 36     | 36   | 36           | 20   | "                      | ...                              | ...  |  |
| "               | 5...  | 37.3            | 37.8   | 37.9   | 36     | 44   | 20           | 28   |                        | ...                              | v    |  |
| "               | 6...  | 37.5            | 38.0   | 37.7   | 36     | 40   | 24           | 24   |                        | v                                | vi   |  |
| "               | 7...  | 37.6            | 38.2   | 37.7   | 36     | 36   | 24           | 20   | "                      | vi                               | vii  |  |
| "               | 8...  | 37.4            | 37.8   | 37.8   | 36     | 44   | 20           | 28   |                        | vii                              | vii  |  |
| "               | 9...  | 37.6            | 38.1   | 38.1   | 36     | 49   | 32           | 32   |                        | vii                              | vii  |  |
| "               | 10... | 38.0            | 38.4   | 38.2   | 36     | 48   | 24           | 33   | Few.                   | vii                              | vii  |  |
| "               | 11... | 38.0            | 38.7   | 38.2   | 40     | 44   | 44           | 44   | Absetn.                | Noon<br>ix iv v                  |      |  |
| "               | 12... | 38.0            | 39.0   | 38.0   | 40     | 44   | 36           | 36   |                        | ix                               | vii  |  |
| "               | 13... | 37.6            | 38.0   | 38.0   | 36     | 40   | 24           | 28   |                        | vii                              | ix   |  |
| "               | 14... | 37.7            | 38.0   | 38.0   | 32     | 36   | 20           | 24   | "                      | ix                               | ix   |  |
| "               | 15... | 37.8            | 38.3   | 38.5   | 36     | 36   | 28           | 16   |                        | viii                             | vii  |  |
| "               | 16... | 38.7            | ...    | 39.0   | 34     | 30   | 30           | 28   |                        | vii                              | vii  |  |
| "               | 17... | 38.3            | ...    | 39.1   | 30     | 38   | 30           | 30   | "                      | vi                               | vi   |  |
| "               | 18... | 38.4            | ...    | 39.9   | 30     | 40   | 18           | 22   |                        | ix                               | ix   |  |
| "               | 19... | 38.3            | ...    | 39.6   | 36     | 34   | 20           | 20   |                        | ix                               | ix   |  |
| "               | 20... | 38.9            | ...    | 39.1   | 37     | 37   | 20           | 24   | "                      | ix                               | ix   |  |
| "               | 21... | 38.3            | ...    | 38.3   | 37     | 37   | 22           | 22   |                        | ix                               | ix   |  |
| "               | 22... | 38.2            | ...    | 38.5   | 36     | 36   | 22           | 22   |                        | ix                               | ix   |  |
| "               | 23... | 38.3            | ...    | 38.6   | 28     | 36   | 20           | 22   | "                      | viii                             | viii |  |
| "               | 24... | 38.3            | ...    | 38.5   | 30     | 33   | 20           | 22   |                        | viii                             | viii |  |
| "               | 25... | 38.4            | ...    | 38.6   | 28     | 30   | 22           | 22   |                        | viii                             | viii |  |
| "               | 26... | 38.1            | ...    | 38.4   | 30     | 32   | 20           | 22   | "                      | viii                             | viii |  |
| "               | 27... | 38.3            | ...    | 38.5   | 32     | 30   | 22           | 24   |                        | viii                             | viii |  |
| "               | 28... | 38.5            | ...    | 38.5   | 30     | 32   | 22           | 22   |                        | viii                             | viii |  |
| "               | 29... | 38.3            | ...    | 38.7   | 32     | 32   | 22           | 22   | "                      | viii                             | viii |  |
| "               | 30... | 38.4            | ...    | 38.7   | 28     | 32   | 20           | 24   |                        | viii                             | viii |  |
| "               | 31... | 38.6            | ...    | 39.1   | 32     | 32   | 22           | 22   |                        | viii                             | viii |  |
| June            | 1...  | 38.3            | ...    | 38.9   | 30     | 30   | 24           | 24   | "                      | viii                             | viii |  |
| "               | 2...  | 38.7            | ...    | 38.9   | 30     | 32   | 24           | 22   |                        | ix                               | ix   |  |
| "               | 3...  | 38.5            | ...    | 38.7   | 32     | 32   | 24           | 24   |                        | ix                               | ix   |  |
| "               | 4...  | 38.6            | ...    | 39.0   | 32     | 30   | 26           | 22   | "                      | x                                | x    |  |
| "               | 5...  | 38.4            | ...    | 38.9   | 30     | 32   | 24           | 24   |                        | x                                | x    |  |
| "               | 6...  | 39.7            | ...    | 39.7   | 34     | 30   | 24           | 26   |                        | x                                | x    |  |
| "               | 7...  | 39.0            | ...    | 39.0   | 34     | 32   | 30           | 26   | "                      | x                                | x    |  |
| "               | 8...  | 39.1            | ...    | 39.1   | 34     | 32   | 30           | 26   |                        | x                                | x    |  |
| "               | 9...  | 38.7            | ...    | 39.1   | 30     | 30   | 38           | 36   |                        | x                                | x    |  |
| "               | 10... | 39.0            | ...    | 39.4   | 32     | 32   | 36           | 34   | "                      | xi                               | xi   |  |
| "               | 11... | 39.3            | ...    | 39.4   | 37     | 37   | 34           | 34   |                        | xi                               | xi   |  |
| "               | 12... | 39.1            | ...    | 39.3   | 34     | 36   | 31           | 34   |                        | xi                               | xi   |  |
| "               | 13... | 39.3            | ...    | 39.4   | 32     | 37   | 28           | 31   | "                      | xi                               | xi   |  |
| "               | 14... | 39.3            | ...    | 39.4   | 37     | 35   | 40           | 32   |                        | xii                              | xii  |  |
| "               | 15... | 39.2            | ...    | 39.3   | 36     | 36   | 34           | 34   |                        | xii                              | xii  |  |
| "               | 16... | 39.3            | ...    | 39.4   | 32     | 34   | 34           | 32   | "                      | xii                              | xii  |  |
| "               | 17... | 39.4            | ...    | 39.4   | 40     | 32   | 30           | 30   |                        | xii                              | xii  |  |
| "               | 18... | 39.1            | ...    | 39.5   | 34     | 40   | 30           | 30   |                        | x                                | x    |  |
| "               | 19... | 39.3            | ...    | 39.3   | 36     | 35   | 34           | 32   | "                      | x                                | x    |  |
| "               | 20... | 39.0            | ...    | 39.4   | 35     | 48   | 28           | 32   |                        | x                                | x    |  |
| "               | 21... | 39.2            | ...    | 39.4   | 34     | 36   | 36           | 34   |                        | x                                | x    |  |
| "               | 22... | 39.1            | ...    | 39.6   | 38     | 41   | 36           | 38   | "                      | x                                | x    |  |
| "               | 23... | 39.1            | ...    | 39.6   | 31     | 36   | 42           | 34   |                        | x                                | x    |  |
| "               | 24... | 39.3            | ...    | 39.3   | 36     | 39   | 41           | 36   |                        | x                                | x    |  |
| "               | 25... | 38.8            | ...    | 39.1   | 32     | 40   | 38           | 34   | "                      | x                                | x    |  |
| "               | 26... | 39.3            | ...    | 39.5   | 37     | 37   | 36           | 34   |                        | x                                | x    |  |
| "               | 27... | 39.2            | ...    | 39.2   | 36     | 34   | 42           | 38   |                        | x                                | x    |  |
| "               | 28... | 39.2            | ...    | 39.7   | 38     | 36   | 42           | 46   | "                      | x                                | x    |  |
| "               | 29... | 39.3            | ...    | 39.4   | 34     | 36   | 40           | 40   |                        | viii                             | viii |  |
| "               | 30... | 39.4            | ...    | 39.7   | 36     | 36   | 40           | 44   |                        | viii                             | viii |  |
| July            | 1...  | 38.8            | ...    | 39.4   | 34     | 30   | 42           | 44   | "                      | viii                             | viii | Death.   |
| "               | 2...  | 39.7            | ...    | 39.7   | 28     | 24   | 50           | 52   |                        | v                                | v    |  |



July 3rd 1895.—Autopsy 16 hours after death.

The abdomen is distended, but there is no swelling or œdema of the extremities or under-surface of the abdomen.

*Thorax*.—There is no fluid in the pleural cavities or adhesions of the pleuræ.

*Lungs*.—There is a localized emphysema at the apices, but although the lungs are tinged green from decomposition there are no subpleural petechiæ present.

The pericardial sac contains a few cubic centimetres of fluid.

*Heart*.—Is normal in size, but flabby and soft. Externally there are no petechiæ. *On section*, the cavities on the right side of the heart contain a few dark-coloured clots, but there are no sub-endocardial ecchymoses. The left side of the heart is contracted, but there are a few small dark-coloured clots. No petechiæ. Valves healthy.

The peritoneal cavity does not contain any fluid.

*Liver*.—Somewhat enlarged, is undergoing decomposition.

*Spleen*.—Is very much enlarged, and the tissues are soft.

*Kidneys*.—Enlarged, congested, and the tissues are friable.

There is *on section* a yellow gelatinous material in the hilum of each organ.

*Stomach*.—Externally presents a stained appearance, due to the colouring matter of the blood. *On section*, the *cuticular* portion presents a normal appearance. The mucous membrane of the *villous* portion is of a light slate colour, and it contains about an ounce of fine sand and earth between the rugæ.

*Intestines*.—Both large and small are congested.

*Bladder*.—Contains forty ounces of orange-coloured urine, but the mucous membrane is not petechiated.

*Brain*.—Healthy.

#### HORSE No. CXX.

Bay Entire Horse from Persian Gulf, aged 7 years, belonging to the Bombay Mounted Police (No. 53), was purchased during the rains of 1894. The animal was first observed to be ailing on December 1st, 1894, and was sent to the Bombay Veterinary College Hospital, where the Surra hæmatozoon was discovered on December 4th.

December 10th.—The animal arrived at the Laboratory Hospital, Poona.

*State on admission*.—The animal presents a very dull appearance and is in poor condition, ribs showing. The visible mucous membranes are pale, the right conjunctival membrane is injected and petechiated, but the left one is free. There is no œdema or swelling of the extremities or under-surface of the abdomen. The skin is hot and the usual symptoms of fever are present. Temp. 9 A.M. 40.5° C. The pulse is normal in character, 60 per minute. Respirations 20. The appetite is lost. The *sphincter ani* is relaxed, and the lower bowel is somewhat prolapsed. The hæmatozoa are few in the blood.

| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine Arsenic (Grains.) |      | REMARKS.  |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------------------------|------|---|
|                 | P.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | A.M.                       | P.M. |   |
| 1894            |                 |        |        |        |      |              |      |                     |                            |      |   |
| December 10...  | 39.3            | 40.3   | 40.1   | 60     | 56   | 20           | 20   | Few                 | ...                        | v    | Conjunctivæ injected.   |
| " 11...         | 40.2            | 40.3   | 40.3   | 72     | 68   | 24           | 24   | "                   | v                          | v    | Do. do.   |
| " 12...         | 39.4            | 39.8   | 39.5   | 56     | 68   | 12           | 12   | Absent.             | v                          | vi   | Do. do.   |
| " 13...         | 38.3            | 39.4   | 38.5   | 48     | 60   | 12           | 12   | "                   | vi                         | vi   | Conjunctivæ slightly injected, slight œdema beneath abdomen.                          |
| " 14...         | 38.5            | 39.3   | 39.1   | 52     | 60   | 12           | 12   | "                   | vi                         | vi   | Right conjunctiva injected and petechiated, left, slightly injected, œdema unchanged. |
| " 15...         | 37.8            | 38.6   | 39.1   | 60     | 72   | 12           | 41   | "                   | vii                        | vii  | Do. do.   |
| " 16...         | 37.5            | 38.6   | 38.3   | 56     | 64   | 12           | 20   | "                   | vii                        | vii  | Right conjunctiva injected, no petechiæ, left, slightly injected, œdema unchanged.    |
| " 17...         | 37.7            | 38.0   | 37.1   | 52     | 60   | 24           | 56   | "                   | ...                        | ...  | Conjunctivæ slightly injected; œdema reduced, anus patent.                            |
| " 18...         | 36.1            | 35.7   | 37.4   | 64     | 84   | 24           | 60   | "                   | ...                        | ...  | Do. injected, animal losing flesh; anus patent.                                       |
| " 19...         | 35.7            | 37.4   | 38.0   | 68     | 92   | 16           | 56   | "                   | ...                        | ...  | Do. yellow, slightly injected left, two petechiæ; anus patent.                        |
| " 20...         | 37.7            | 37.8   | 38.3   | 96     | 80   | 20           | 40   | "                   | ...                        | ...  | Both eyes swollen; anus closed.   |
| " 21...         | 37.8            | 38.1   | 38.1   | 72     | 52   | 20           | 52   | "                   | ...                        | ...  | Condition slightly improved.  |
| " 22...         | 37.4            | 37.4   | 38.2   | 52     | 56   | 16           | 24   | "                   | ...                        | ...  | Conjunctivæ faintly yellow. No petechiæ.  |
| " 23...         | 37.8            | 38.0   | 38.6   | 48     | 52   | 20           | 40   | "                   | ...                        | ...  | Do. do.   |
| " 24...         | 38.1            | 38.3   | 38.6   | 52     | 52   | 20           | 28   | "                   | ...                        | ...  | Do. pale. No petechiæ.  |
| " 25...         | 37.1            | 38.0   | 38.3   | 48     | 52   | 12           | 20   | "                   | ...                        | ...  | Do. do.   |
| " 26...         | 37.7            | 38.1   | 38.4   | 48     | 56   | 12           | 36   | "                   | ...                        | ...  | Do. do.   |
| " 27...         | 38.1            | 37.8   | 38.3   | 48     | 48   | 12           | 20   | "                   | ...                        | ...  | Do. do.   |
| " 28...         | 38.0            | 38.4   | 38.1   | 56     | 56   | 12           | 32   | "                   | ...                        | ...  | Do. very pallid. Do. Cough.   |
| " 29...         | 38.1            | 38.1   | 38.5   | 52     | 48   | 16           | 24   | "                   | ...                        | ...  | Do. do.   |
| " 30...         | 37.8            | 37.7   | 38.2   | 48     | 48   | 8            | 12   | "                   | iii                        | iii  | Do. injected. do.   |
| " 31...         | 37.7            | 37.8   | 38.6   | 48     | 76   | 12           | 12   | "                   | iii                        | iii  | Do. do. do.   |

| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine Arsenic (Grains.) | REMARKS.   |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------------------------|--|
|                 | A.M.            | I P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |                            |  |
| 1895.           |                 |        |        |        |      |              |      |                     | A.M. P.M.                  |  |
| January 1...    | 37.7            | 37.8   | 38.8   | 52     | 52   | 12           | 16   | Absent.             | iv iv                      | Conjunctivæ injected.  |
| " 2...          | 37.7            | 38.4   | 38.8   | 52     | 56   | 12           | 28   | "                   | iv iv                      | Do. do.  |
| " 3...          | 38.2            | 38.3   | 39.1   | 52     | 52   | 12           | 24   | "                   | v v                        | Do. do.  |
| " 4...          | 38.3            | 38.4   | 38.6   | 56     | 52   | 8            | 28   | "                   | v v                        | Do. do. left, one extravasation.                               |
| " 5...          | 38.3            | 38.3   | 38.6   | 52     | 56   | 12           | 20   | "                   | vi vi                      | Do. do. but pale.  |
| " 6...          | 38.2            | 38.6   | 39.1   | 64     | 68   | 12           | 32   | "                   | vi vi                      | Right conjunctiva clear, left, injected and one extravasation. |
| " 7...          | 37.8            | 38.4   | 38.4   | 60     | 72   | 12           | 24   | "                   | vi vi                      | Do. do.  |
| " 8...          | 38.2            | 38.4   | 38.3   | 52     | 84   | 12           | 40   | "                   | vi vi                      | Do. do.  |
| " 9...          | 37.2            | 37.7   | 37.8   | 84     | 72   | 16           | 12   | "                   | vi vi                      | Do. do. and two petechiæ.                                      |
| " 10...         | 37.6            | 37.8   | 38.1   | 72     | 80   | 12           | 24   | "                   | vi ...                     | Do. do.  |
| " 11...         | 37.2            | 37.7   | 37.7   | 68     | 78   | 8            | 32   | "                   | vi ...                     | Conjunctivæ slightly injected, one extravasation in each.      |
| " 12...         | 37.6            | 38.2   | 37.7   | 78     | 88   | 8            | 40   | "                   | ... ...                    | Do. do. do.  |
| " 13...         | 37.5            | 38.6   | 39.2   | 68     | 84   | 8            | 22   | "                   | ... ...                    | Right conjunctiva injected, left, one extravasation.           |
| " 14...         | 37.7            | 39.2   | 38.2   | 62     | 48   | 20           | 48   | "                   | ... ...                    |  |
| " 15...         | ...             | ...    | ...    | ...    | ...  | ...          | ...  | "                   | ... ...                    | Death at 5 A.M.  |

14th January 1895.—Autopsy six hours after death. Body fairly well nourished, limbs not œdematous.

Thorax.—There is no fluid in the pleural cavities, and there are no pleuritic adhesions.

Lungs are large and occupy the whole cavity of the chest. On section a considerable quantity of a frothy-mucous fluid exudes from the cut surfaces of both organs. There are no subpleural petechiæ.

The pericardial sac contains a very small amount of fluid.

Heart.—Weighs 4 lbs. 11 ozs. Externally and internally on section the organ presents a healthy appearance.

The abdominal cavity is free from fluid.

Liver.—Weighs 11 lbs. 1 oz. The convex surface is the seat of old perihepatitis, and on section the tissues present a dark red colour. There are no caseous nodules.

Spleen.—Weighs 1 lb. 3¼ lbs. and is somewhat small in size. On section the tissues are firm and appear healthy.

Kidneys.—The right weighs 1 lb. 14¼ ozs.; the left 1 lb. 13¼ ozs. On section healthy.

Stomach.—The cuticular portion is stained yellow, and the villous portion presents a normal appearance.

Small and large Intestines.—Healthy.

Bladder.—Normal.

#### HORSE No. CXXI.

Grey Entire Horse from the Persian Gulf, aged 5 years, belonging to the Bombay Mounted Police (No. 96), was bought during the rains of 1894. The animal was first observed to be ailing on the 20th November. A few days later it was admitted to the Bombay Veterinary Hospital, where the hæmatozoon was discovered on the 3rd December.

December 10th, 7 A.M.—The animal arrived at the Laboratory Hospital, Poona.

State on admission.—The animal is in fair condition. The visible mucous membranes are of an exceedingly pale yellow colour, but there are no petechiæ present. The skin is hot, and the ordinary symptoms of fever are present. Temp. 40.5°C. The pulse is considerably accelerated, 90 per minute, and is bounding in character. Respirations quick and shallow, 41. There is no œdema of the abdomen, sheath or lower extremities. The appetite is fair. The dung is normal in appearance. The hæmatozoa are swarming in the blood. Ratio of white to red corpuscles 1 : 179.

The animal was ordered Liq. Arsenicalis, 3x night and morning.

| Month and Date. | Temperature °C. |      |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine Arsenic (Grains.) | REMARKS.   |
|-----------------|-----------------|------|--------|--------|------|--------------|------|---------------------|----------------------------|--|
|                 | A.M.            | P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |                            |  |
| 1894.           |                 |      |        |        |      |              |      |                     | A.M. P.M.                  |  |
| December 10...  | 40.5            | 41.3 | 41.6   | 68     | 92   | 16           | 32   | Swarming.           | ... v                      | Conjunctivæ pale yellow. No petechiæ.  |
| " 11...         | 40.5            | 40.1 | 39.5   | 84     | 80   | 28           | 32   | Absent.             | v v                        | Do. do.  |
| " 12...         | 38.5            | 39.1 | 38.7   | 52     | 48   | 16           | 16   | "                   | v vi                       | Do. do.  |
| " 13...         | 37.0            | 38.3 | 38.5   | 44     | 48   | 12           | 20   | "                   | vi vi                      | Right conjunctiva pale, one extravasation, left conjunctiva yellow, slightly injected, several petechiæ. |
| " 14...         | 36.8            | 38.2 | 38.5   | 44     | 52   | 16           | 24   | "                   | vi vi                      | Do. do.  |
| " 15...         | 36.7            | 37.7 | 39.0   | 44     | 52   | 12           | 12   | "                   | ... vii                    | Do. left yellow, no petechiæ.  |



| Month and Date. | Temperature °C. |        |        | Pulse. |        | Respiration. |      | Hæmatozoa in Blood. | Medicine Arsenic (Grains.) |      | REMARKS.  |
|-----------------|-----------------|--------|--------|--------|--------|--------------|------|---------------------|----------------------------|------|---|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M.   | A.M.         | P.M. |                     | A.M.                       | P.M. |   |
| 1894.           |                 |        |        |        |        |              |      |                     |                            |      |   |
| Decem. 16 ...   | 37.3            | 38.1   | 38.8   | 44     | 60     | 8            | 24   | Absent.             | ... vii                    |      | Conjunctivæ pale. No petechiæ.                          |
| " 17 ...        | 37.7            | 37.8   | 38.7   | 48     | 56     | 8            | 36   | "                   | vii vii                    |      | Do. slightly yellow.                                    |
| " 18 ...        | 37.5            | 38.5   | 38.5   | 56     | 60     | 12           | 40   | "                   | vii vii                    |      | Do. do. and injected.                                   |
| " 19 ...        | 37.5            | 38.2   | 38.5   | 56     | 76     | 8            | 16   | "                   | vii vi                     |      | Do. yellow, slight cough.                               |
| " 20 ...        | 37.3            | 38.0   | 39.0   | 56     | 80     | 8            | 12   | "                   | vi vi                      |      | Do. pale. Cough continues.                              |
| " 21 ...        | 37.5            | 38.4   | 38.4   | 68     | 84     | 12           | 44   | "                   | vi vi                      |      | Do. yellow and injected.                                |
| " 22 ...        | 37.8            | 38.2   | 38.5   | 72     | 88     | 12           | 52   | "                   | iii ...                    |      | Do. do. Animal much reduced.                            |
| " 23 ...        | 37.5            | 37.3   | 38.0   | 76     | 84     | 20           | 56   | "                   | ... ...                    |      | Do. Anus patent.  |
| " 24 ...        | 38.6            | 38.8   | ...    | 124    | ...    | 84           | ...  | "                   | ... ...                    |      | Right conjunctiva yellow, left, orange and petechiated. |
|                 |                 |        |        |        | Death. |              |      |                     |                            |      |   |

24th December 1894.—Autopsy one hour after death.

The body is somewhat emaciated. There is no fluid in the pleural cavities, and there are no pleuritic adhesions.

*Lungs*.—There are no extravasations of blood on the surface of the organs, or caseous nodules under the visceral pleuræ. On section the tissues present a reddish pink colour, and appear to be well distended with air.

The pericardial sac contains about 20c.c. of clear fluid.

*Heart*.—Weighs 5 lbs. Externally there is nothing pathological to notice. On section, the cavities are free from sub-endocardial petechiæ.

There is no fluid in the peritoneal cavity.

*Liver*.—Weighs 13 lbs. 4½ ozs. The convex surface presents signs of old perihepatitis, and there are a few calcareous nodules dotted over the surfaces of the organ. On section, the tissues are dark in colour and somewhat friable.

*Spleen*.—Weighs 1 lb. 9½ ozs., is normal in size, and the tissues on section appear healthy.

*Kidneys*.—Right weighs 1 lb. 15 ozs, the left 1 lb. 12 ozs. The stellate veins are injected, and on section the tissues of the organs are dark in colour.

*Stomach*.—Presents on section a healthy appearance.

*Intestines*.— Ditto.

*Bladder*.— Ditto.

#### HORSE No. CXXII.

Iron Grey Entire Horse from the Persian Gulf, aged 6 years, belonging to the Bombay Mounted Police (No. 96), was purchased during the rains of 1894. The animal was first observed to be ailing on November 20th, and was sent to the Bombay Veterinary College Hospital, where the Surra hæmatozoon was discovered on November 28th, 1894.

December 10th, 7-30 A.M.—The animal arrived at the Laboratory Hospital.

*State on admission*.—The animal is in fair condition. The visible mucous membranes are very pale, but are not petechiated. The skin is hot. Temp. 39.2°C. The pulse normal in character, 48. Respirations normal, 16. There is no swelling or œdema of the limbs or under surface of the abdomen. The appetite is good, and the excreta normal in appearance. The hæmatozoa are few in the blood.

The animal was ordered Liquor Arsenicalis 3x night and morning.

| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine Arsenic (Grains.) |      | REMARKS.  |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------------------------|------|---|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | A.M.                       | P.M. |   |
| 1894.           |                 |        |        |        |      |              |      |                     |                            |      |   |
| Decem. 10 ...   | 38.6            | 38.8   | 39.2   | 48     | 48   | 16           | 16   | Few                 | ... v                      |      | Conjunctivæ pale and injected.  |
| " 11 ...        | 38.4            | 38.3   | 38.5   | 40     | 48   | 36           | 28   | Numerous            | v v                        |      | Do. do.   |
| " 12 ...        | 38.5            | 39.1   | 38.7   | 48     | 44   | 12           | 20   | "                   | v vi                       |      | Do. do.   |
| " 13 ...        | 37.5            | 38.5   | 38.3   | 52     | 40   | 20           | 12   | Few                 | vi vi                      |      | Right conjunctiva pale, but injected, left, much injected, no petechiæ. |
| " 14 ...        | 37.3            | 38.1   | 38.2   | 40     | 40   | 8            | 8    | Absent              | vi vi                      |      | Do. do. do.   |
| " 15 ...        | 38.2            | 38.1   | 38.6   | 36     | 44   | 8            | 12   | "                   | vii vii                    |      | Do. do. do.   |
| " 16 ...        | 37.7            | 38.1   | 38.6   | 44     | 44   | 8            | 12   | "                   | ... vii                    |      | Do. do. do.   |
| " 17 ...        | 37.7            | 38.2   | 38.6   | 36     | 43   | 8            | 16   | "                   | vii vii                    |      | Conjunctivæ slightly yellow and injected.                               |
| " 18 ...        | 37.5            | 37.8   | 38.1   | 36     | 52   | 8            | 28   | "                   | vii vii                    |      | Do. do. do.   |
| " 19 ...        | 37.3            | 38.2   | 38.5   | 36     | 44   | 12           | 16   | "                   | vii vi                     |      | Conjunctivæ more injected.  |
| " 20 ...        | 37.5            | 38.4   | 38.6   | 36     | 48   | 12           | 28   | "                   | vi vi                      |      | Animal dull. Right conjunctiva one extravasation, left, injected.       |
| " 21 ...        | 37.8            | 38.4   | 38.5   | 48     | 52   | 12           | 16   | "                   | vi ...                     |      | Do. do. do.   |
| " 22 ...        | 37.7            | 38.0   | 38.5   | 48     | 60   | 20           | 24   | "                   | ... ...                    |      | Conjunctivæ yellow and injected; slight œdema beneath abdomen.          |
| " 23 ...        | 38.4            | 38.5   | 38.8   | 44     | 76   | 12           | 36   | "                   | ... ...                    |      | Do. do. do.   |



| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Medicine<br>Arsenic<br>(Grains.) |                          | REMARKS.   |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|------------------------|----------------------------------|--------------------------|--|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | A.M.                             | P.M.                     |  |
| 1894.           |                 |        |        |        |      |              |      |                        |                                  |                          |  |
| Decem. 24 ...   | 38.0            | 38.1   | 38.4   | 40     | 44   | 12           | 16   | Absent.                | ...                              | ...                      | Right conjunctiva orange and injected ;<br>swelling beneath abdomen.         |
| " 25 ...        | 37.7            | 37.7   | 38.4   | 40     | 52   | 12           | 12   | "                      | ...                              | ...                      | Right conjunctiva clear, left, injected.                                     |
| " 26 ...        | 37.8            | 38.1   | 38.4   | 44     | 56   | 8            | 12   | "                      | ...                              | ...                      | Right conjunctiva slightly petechiated,<br>left, clear.                      |
| " 27 ...        | 38.1            | 38.4   | 38.3   | 44     | 52   | 12           | 28   | "                      | ...                              | iii                      | Conjunctivæ injected.  |
| " 28 ...        | 38.0            | 38.2   | 38.3   | 48     | 44   | 12           | 40   | "                      | iii                              | iii                      | Condition unchanged.   |
| " 29 ...        | 37.7            | 38.1   | 38.6   | 38     | 48   | 12           | 32   | "                      | iii                              | iv                       | Do. do.  |
| " 30 ...        | 37.8            | 38.1   | 38.4   | 52     | 44   | 12           | 24   | "                      | iv                               | iv                       | Do. do.  |
| " 31 ...        | 37.8            | 38.1   | 38.5   | 52     | 48   | 12           | 36   | "                      | iv                               | iv                       | Do. do.  |
| 1895.           |                 |        |        |        |      |              |      |                        |                                  |                          |  |
| January 1 ...   | 38.0            | 38.3   | 38.6   | 40     | 44   | 12           | 24   | "                      | iv                               | iv                       | Conjunctivæ injected, no petechiæ.   |
| " 2 ...         | 38.0            | 38.3   | 38.0   | 40     | 44   | 10           | 20   | "                      | iv                               | iv                       | Do. do.  |
| " 3 ...         | 38.0            | 38.0   | 38.2   | 36     | 40   | 10           | 24   | "                      | v                                | v                        | Do. do.  |
| " 4 ...         | 37.8            | 38.0   | 38.2   | 36     | 40   | 12           | 16   | "                      | v                                | v                        | Do. do.  |
| " 5 ...         | 38.0            | 38.2   | 38.4   | 40     | 44   | 12           | 16   | "                      | v                                | vi                       | Do. do.  |
| " 6 ...         | 37.7            | 38.0   | 38.4   | 40     | 44   | 12           | 20   | "                      | vi                               | vi                       | Do. do.  |
| " 7 ...         | 38.1            | 38.3   | 38.3   | 40     | 40   | 12           | 12   | "                      | vi                               | vi                       | Do.* do.   |
| " 8 ...         | 38.0            | 38.0   | 38.3   | 36     | 40   | 12           | 12   | "                      | vi                               | vi                       | Do. do. Right conjunctiva<br>one extravasation.                              |
| " 9 ...         | 37.8            | 37.8   | 38.1   | 36     | 36   | 12           | 12   | "                      | vi                               | vi                       | Right conjunctiva one extravasation, left,<br>deeply injected.               |
| " 10 ...        | 37.8            | 37.8   | 38.1   | 36     | 40   | 8            | 20   | "                      | vi                               | vi                       | Do. do. do.  |
| " 11 ...        | 37.8            | 37.9   | 38.2   | 33     | 39   | 8            | 16   | "                      | vi                               | v                        | Conjunctivæ injected.  |
| " 12 ...        | 38.0            | 38.2   | 38.2   | 36     | 36   | 8            | 16   | "                      | v                                | v                        | Do.  |
| " 13 ...        | 37.8            | 38.0   | 38.3   | 36     | 40   | 8            | 20   | "                      | v                                | v                        | Do.  |
| " 14 ...        | 38.1            | 38.3   | 38.3   | 41     | 40   | 9            | 8    | "                      | v                                | iv                       | Do.  |
| " 15 ...        | 38.2            | 38.5   | 38.7   | 36     | 42   | 9            | 14   | "                      | iv                               | iv                       | Do. Animal dull. Lucerne refused.  |
| " 16 ...        | 38.2            | 38.3   | 38.7   | 38     | 44   | 10           | 12   | "                      | iv                               | iv                       | Do. do.  |
| " 17 ...        | 38.2            | 38.4   | 38.3   | 40     | 40   | 9            | 20   | "                      | iv                               | iii                      | Do. do. Lower eyelid swollen.  |
| " 18 ...        | 37.6            | 37.7   | 38.0   | 36     | 40   | 10           | 16   | "                      | iii                              | iii                      | Do. do. do.  |
| " 19 ...        | 37.0            | 37.3   | 38.0   | 36     | 46   | 12           | 14   | "                      | ...                              | ...                      | Do. do. Eyelids less swollen.  |
| " 20 ...        | 37.4            | 37.5   | 38.1   | 32     | 44   | 8            | 16   | "                      | ...                              | ...                      | Conjunctiva injected, slightly petechiated.                                  |
| " 21 ...        | 37.5            | 37.5   | 37.7   | 32     | 36   | 8            | 16   | "                      | ...                              | ...                      | Do. do.  |
| " 22 ...        | 37.4            | 37.4   | 37.7   | 32     | 36   | 8            | 12   | "                      | ...                              | ...                      | Do. do.  |
| " 23 ...        | 37.4            | 37.6   | 38.0   | 36     | 40   | 12           | 12   | "                      | ...                              | ...                      | Right conjunctiva injected and one extra-<br>vasation, left, injected.       |
| " 24 ...        | 37.4            | 37.7   | 38.0   | 32     | 36   | 12           | 16   | "                      | ...                              | ...                      | Conjunctivæ slightly injected.   |
| " 25 ...        | 37.3            | 38.1   | 38.5   | 36     | 36   | 10           | 14   | "                      | ...                              | ii                       | Conjunctivæ clearer.   |
| " 26 ...        | 37.7            | 37.7   | 38.4   | 32     | 36   | 12           | 16   | "                      | ii                               | ii                       | Right conjunctiva clearer, left, injected.                                   |
| " 27 ...        | 37.9            | 37.9   | 38.4   | 32     | 52   | 8            | 16   | "                      | ii                               | ii                       | Do. do.  |
| " 28 ...        | 37.6            | 37.9   | 38.2   | 28     | 36   | 12           | 12   | "                      | ii                               | ii                       | Both conjunctivæ slightly injected.  |
| " 29 ...        | 37.6            | 37.7   | 38.2   | 28     | 36   | 8            | 16   | "                      | ii                               | iii                      | Do. do.  |
| " 30 ...        | 37.9            | 38.2   | 38.6   | 32     | 32   | 12           | 16   | "                      | iii                              | iii                      | Do. do.  |
| " 31 ...        | 38.1            | 38.4   | 38.3   | 32     | 36   | 12           | 12   | "                      | iii                              | Sodium<br>Iodide.<br>3ii | Right conjunctiva clearer, left, injected.                                   |
| February 1 ...  | 37.9            | 38.0   | 38.2   | 32     | 36   | 8            | 12   | "                      | 3ii                              | 3ii                      | Right conjunctiva injected, one extravasa-<br>tion, left, slightly injected. |
| " 2 ...         | 37.8            | 37.9   | 38.4   | 32     | 36   | 12           | 12   | "                      | 3ii                              | 3ii                      | Do. do. Animal dull.   |
| " 3 ...         | 38.0            | 38.2   | 38.8   | 32     | 40   | 12           | 24   | "                      | 3ii                              | ...                      | Do. do. do.  |
| " 4 ...         | 38.3            | 38.5   | 39.0   | 36     | 40   | 20           | 16   | "                      | ...                              | v                        | Do. do. do.  |
| " 5 ...         | 38.2            | 38.2   | 38.7   | 40     | 44   | 12           | 12   | "                      | v                                | v                        | Right conjunctiva clearer do.  |
| " 6 ...         | 37.5            | 37.7   | 38.2   | 36     | 42   | 12           | 12   | "                      | v                                | v                        | Conjunctivæ dirty and slightly injected.                                     |
| " 7 ...         | 37.5            | 37.6   | 38.0   | 40     | 36   | 16           | 12   | "                      | v                                | v                        | Right conjunctiva clearer, left, injected.                                   |
| " 8 ...         | 37.4            | 37.5   | 38.1   | 36     | 36   | 12           | 12   | "                      | v                                | v                        | Do. dirty do.  |
| " 9 ...         | 37.1            | 37.7   | 38.3   | 40     | 44   | 12           | 8    | "                      | v                                | v                        | Do. slightly petechiated,<br>left, clearer.                                  |
| " 10 ...        | 37.1            | 37.4   | 37.8   | 36     | 40   | 12           | 12   | "                      | v                                | v                        | Do. injected, left, slightly<br>injected.                                    |
| " 11 ...        | 37.5            | 37.4   | 37.7   | 36     | 36   | 12           | 8    | "                      | v                                | v                        | Conjunctivæ less injected.   |
| " 12 ...        | 37.1            | 37.2   | 38.1   | 36     | 40   | 8            | 12   | "                      | v                                | v                        | Do. do.  |
| " 13 ...        | 37.3            | 37.7   | 38.5   | 36     | 44   | 12           | 24   | "                      | v                                | v                        | Do. left, faintly yellow.  |
| " 14 ...        | 37.4            | 38.1   | 38.2   | 40     | 44   | 12           | 20   | "                      | v                                | v                        | Conjunctivæ much injected.   |
| " 15 ...        | 37.7            | 38.2   | 38.2   | 36     | 44   | 12           | 32   | "                      | v                                | v                        | Conjunctivæ less injected.   |
| " 16 ...        | 38.1            | 38.9   | 39.6   | 40     | 48   | 12           | 20   | "                      | v                                | v                        | Do. do.  |
| " 17 ...        | 39.2            | 39.6   | 39.6   | 48     | 56   | 16           | 28   | "                      | v                                | vi                       | Conjunctivæ slightly injected and pete-<br>chiated.                          |

| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine Arsenic (Grains.) |      | REMARKS.  |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------------------------|------|---|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | A.M.                       | P.M. |   |
| 1895.           |                 |        |        |        |      |              |      |                     |                            |      |   |
| Febry. 18 ...   | 39.6            | 39.9   | 40.0   | 48     | 52   | 12           | 40   | Absent              | vi                         | vii  | Conjunctivæ injected, yellow discharge from the left nostril.               |
| " 19 ...        | 39.0            | 39.3   | 39.4   | 44     | 52   | 16           | 32   | "                   | vii                        | vii  | Do. slightly yellow and injected.   |
| " 20 ...        | 38.3            | 38.6   | 38.6   | 40     | 48   | 20           | 16   | "                   | vii                        | vii  | Do. injected.   |
| " 21 ...        | 37.9            | 38.0   | 38.3   | 40     | 44   | 12           | 24   | "                   | vii                        | vii  | Do. slightly injected.  |
| " 22 ...        | 37.8            | 38.2   | 37.9   | 40     | 36   | 12           | 12   | "                   | vii                        | vii  | Do. much injected.  |
| " 23 ...        | 37.5            | 37.6   | 37.7   | 40     | 40   | 8            | 12   | "                   | vii                        | vii  | Do. do.   |
| " 24 ...        | 37.5            | 37.1   | 37.9   | 36     | 44   | 12           | 12   | "                   | vii                        | ...  | Right conjunctiva injected, left, yellow and injected.                      |
| " 25 ...        | 37.5            | 37.4   | 38.0   | 40     | 52   | 12           | 20   | "                   | ...                        | ...  | Right conjunctiva clearer do.   |
| " 26 ...        | 37.2            | 37.6   | 38.0   | 36     | 40   | 12           | 28   | "                   | ...                        | ...  | Do. do.   |
| " 27 ...        | 37.5            | 37.9   | 38.0   | 36     | 48   | 12           | 32   | "                   | ...                        | ...  | Conjunctivæ injected.   |
| " 28 ...        | 37.3            | 38.1   | 37.9   | 40     | 40   | 12           | 24   | "                   | ...                        | ...  | Do.   |
| March 1 ...     | 37.4            | 38.1   | 38.2   | 32     | 48   | 12           | 32   | "                   | ...                        | ...  | Animal much brighter. Right conjunctiva clear, left, slightly injected.     |
| " 2 ...         | 37.7            | 38.1   | 37.1   | 36     | 40   | 12           | 12   | "                   | ...                        | ...  | Conjunctivæ clearer.  |
| " 3 ...         | 37.1            | 38.1   | 38.2   | 32     | 40   | 12           | 24   | "                   | ...                        | ...  | Right conjunctiva clear, left, slightly injected, also the nasal membranes. |
| " 4 ...         | 37.5            | 37.9   | 37.9   | 32     | 36   | 12           | 20   | "                   | iv                         | iv   | Conjunctivæ slightly injected.  |
| " 5 ...         | 37.2            | 38.2   | 38.3   | 28     | 36   | 12           | 24   | "                   | iv                         | vi   | Do. do.   |
| " 6 ...         | 37.2            | 38.1   | 38.1   | 44     | 36   | 12           | 16   | "                   | v                          | v    | Do. do.   |
| " 7 ...         | 37.4            | 38.3   | 38.1   | 32     | 40   | 10           | 16   | "                   | v                          | v    | Conjunctivæ clearer.  |
| " 8 ...         | 37.7            | 38.2   | 37.9   | 36     | 36   | 12           | 20   | "                   | v                          | v    | Do.   |
| " 9 ...         | 37.7            | 38.1   | 38.1   | 36     | 44   | 16           | 36   | "                   | v                          | v    | Conjunctivæ injected, in the right, one extravasation.                      |
| " 10 ...        | 37.5            | 38.0   | 37.8   | 40     | 40   | 16           | 36   | "                   | v                          | v    | Conjunctivæ slightly injected. Right con-                                   |
| " 11 ...        | 37.5            | 38.0   | 38.1   | 36     | 36   | 16           | 16   | "                   | v                          | v    | Do. do. junctiva one extravasation.   |
| " 12 ...        | 37.6            | 37.9   | 38.0   | 36     | 36   | 20           | 20   | "                   | v                          | v    | Do.   |
| " 13 ...        | 37.6            | 38.2   | 38.0   | 36     | 44   | 20           | 16   | "                   | v                          | v    | Conjunctivæ clearer.  |
| " 14 ...        | 37.6            | 38.0   | 37.9   | 36     | 41   | 20           | 28   | "                   | v                          | vi   | Animal dull. Conjunctivæ slightly injected, right, one extravasation.       |
| " 15 ...        | 37.5            | 38.0   | 38.0   | 40     | 44   | 20           | 24   | "                   | vi                         | vii  | Right conjunctiva deeply injected, left, slightly injected.                 |
| " 16 ...        | 37.7            | 37.9   | 38.0   | 36     | 48   | 16           | 20   | "                   | vii                        | vii  | Conjunctivæ injected.   |
| " 17 ...        | 37.4            | 37.9   | 38.0   | 52     | 52   | 12           | 36   | "                   | vii                        | vii  | Do. clearer.  |
| " 18 ...        | 37.8            | 37.9   | 37.9   | 48     | 48   | 20           | 28   | "                   | ...                        | ...  | Do. injected.   |
| " 19 ...        | 37.5            | 38.0   | 37.9   | 40     | 44   | 12           | 24   | "                   | ...                        | ...  | Do. do.   |
| " 20 ...        | 37.6            | 38.2   | 38.0   | 36     | 44   | 12           | 24   | "                   | ...                        | ...  | Do. clearer.  |
| " 21 ...        | 37.5            | 37.9   | 37.9   | 32     | 40   | 12           | 28   | "                   | ...                        | ...  | Do. do.   |
| " 22 ...        | 37.6            | 37.9   | 38.0   | 36     | 44   | 12           | 44   | "                   | ...                        | ...  | Do. clear.  |
| " 23 ...        | 37.9            | 38.2   | 37.9   | 40     | 40   | 28           | 24   | "                   | ...                        | ...  | Do. do. Animal bright.  |
| " 24 ...        | 37.9            | 38.0   | 38.5   | 36     | 40   | 16           | 28   | "                   | ...                        | iv   | Do. do. do.   |
| " 25 ...        | 37.8            | 39.0   | 38.4   | 36     | 44   | 12           | 20   | "                   | iv                         | ...  | Do. injected, left, slightly petechiated                                    |
| " 26 ...        | 37.5            | 38.0   | 38.3   | 40     | 44   | 16           | 24   | "                   | iv                         | ...  | Right conjunctiva clearer, left, yellow.                                    |
| " 27 ...        | 37.7            | 38.4   | 38.3   | 36     | 40   | 12           | 16   | "                   | ...                        | ...  | Conjunctivæ slightly injected.  |
| " 28 ...        | 37.6            | 37.4   | 38.3   | 36     | 36   | 12           | 28   | "                   | ...                        | ...  | Do. do. Traces of petechiæ.   |
| " 29 ...        | 38.0            | 38.3   | 38.7   | 36     | 52   | 16           | 36   | "                   | ...                        | ...  | Right conjunctiva injected, left, clear.                                    |
| " 30 ...        | 38.1            | 38.6   | 38.3   | 40     | 40   | 20           | 16   | "                   | ...                        | ...  | Conjunctivæ injected.   |
| " 31 ...        | 37.6            | 38.4   | 38.5   | 36     | 44   | 24           | 24   | "                   | ...                        | ...  | Do. do.   |
| April 1 ...     | 37.8            | 38.3   | 38.1   | 36     | 44   | 16           | 24   | "                   | ...                        | ...  | Do. do.   |
| " 2 ...         | 37.8            | 38.2   | 38.1   | 36     | 40   | 16           | 16   | "                   | ...                        | ...  | Conjunctivæ clear.  |
| " 3 ...         | 37.6            | 38.3   | 38.4   | 40     | 44   | 16           | 20   | "                   | ...                        | ...  | Do. do.   |
| " 4 ...         | 38.2            | 39.3   | 38.7   | 48     | 44   | 20           | 20   | "                   | ...                        | ...  | Do. yellow.   |
| " 5 ...         | 38.5            | 39.3   | 38.8   | 40     | 52   | 24           | 28   | Few                 | ...                        | v    | Do. dirty orange.   |
| " 6 ...         | 38.8            | 40.0   | 39.8   | 36     | 52   | 16           | 20   | "                   | v                          | v    | Do. do.   |
| " 7 ...         | 39.3            | 39.9   | 40.1   | 48     | 48   | 12           | 20   | "                   | v                          | v    | Do. orange and petechiated.   |
| " 8 ...         | 39.0            | 40.2   | 40.0   | 40     | 44   | 12           | 28   | "                   | v                          | v    | Do. dirty yellow.   |
| " 9 ...         | 39.7            | 40.0   | 39.7   | 52     | 44   | 16           | 28   | Absent              | v                          | v    | Do. do. Traces of petechiæ.   |
| " 10 ...        | 38.9            | 39.9   | 39.9   | 44     | 48   | 16           | 20   | Few                 | v                          | v    | Do. do. Right conjunctiva one extravasation.                                |
| " 11 ...        | 38.2            | 39.0   | 38.8   | 40     | 44   | 24           | 28   | Absent              | v                          | v    | Do. do. do.   |
| " 12 ...        | 38.5            | 39.2   | 39.0   | 44     | 52   | 16           | 24   | "                   | v                          | v    | Do. do. do.   |
| " 13 ...        | 37.5            | 38.7   | 39.3   | 52     | 68   | 52           | 40   | "                   | ...                        | ...  | Right conjunctiva yellow and traces of petechiæ, left, injected.            |



| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine Arsenic (Grains.) |      | REMARKS.   |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------------------------|------|--|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | A.M.                       | P.M. |  |
| 1895.           |                 |        |        |        |      |              |      |                     |                            |      |  |
| April 14 ...    | 37.8            | 39.1   | 38.8   | 44     | 48   | 12           | 24   | Absent              | ...                        | ...  | Conjunctivæ yellow and injected.                         |
| " 15 ...        | 38.4            | 38.9   | 39.0   | 44     | 52   | 12           | 40   | "                   | ...                        | ...  | Do. do.  |
| " 16 ...        | 39.0            | 39.3   | 39.2   | 44     | 44   | 16           | 28   | "                   | ...                        | ...  | Do. do.  |
| " 17 ...        | 38.9            | 39.5   | 39.5   | 40     | 44   | 20           | 24   | "                   | ...                        | ...  | Do. do.  |
| " 18 ...        | 39.4            | 39.9   | 39.8   | 44     | 44   | 24           | 20   | "                   | ...                        | ...  | Do. do.  |
| " 19 ...        | 39.3            | 40.1   | 39.8   | 56     | 44   | 28           | 24   | "                   | ...                        | ...  | Do. dirty orange.  |
| " 20 ...        | 39.3            | 39.6   | 39.7   | 40     | 40   | 28           | 24   | Few                 | ...                        | ii   | Do. do.  |
| " 21 ...        | 39.2            | 39.8   | 39.4   | 40     | 44   | 16           | 24   | "                   | ii                         | ii   | Do. orange and petechiated.                              |
| " 22 ...        | 39.1            | 39.5   | 39.5   | 68     | 64   | 24           | 36   | "                   | ...                        | ...  | Do. do.  |
| " 23 ...        | 38.6            | 38.9   | 38.5   | 64     | 48   | 28           | 28   | "                   | ...                        | ...  | Do. orange and injected. Slight discharge from the eyes. |
| " 24 ...        | 38.3            | 38.1   | ...    | 52     | ...  | 28           | ...  | Numerous            | ...                        | ...  | .....  |
|                 |                 |        |        |        |      |              |      | Death at 4-30 P.M.  |                            |      |  |

24th April 1895.—Autopsy one hour after death.

The body is somewhat emaciated, and there is slight swelling and œdema of the extremities.

*Thorax*.—There is no fluid in the pleural cavities, and there are no pleuritic adhesions.

*Lungs*.—Both apices are the seat of a slight localized emphysema. *On section* the organs are filled with blood. And on pressure blood-stained mucus exudes from the cut surfaces.

The pericardial sac contains about 30 cc. of an amber-coloured fluid.

*Heart*.—Weighs 4 lbs. 15½ ozs. There are a few small dark red coloured spots dotted over the anterior surface of the base of the organ, but no exudation. *On section* the right auricle and ventricle contains some dark coloured but recent clots. No sub-endocardial petechiæ. The left auricle is empty and healthy in appearance. The left ventricle is contracted. The valves are healthy.

The *peritoneal cavity* contained a few ounces of a clear amber fluid, but the surface of the intestines presents a healthy appearance.

*Liver*.—Is normal in size, weighs 9 lbs. 6 ozs., and there are some signs of perihepatitis. There are no concretions on the surface; *on section* the tissues are pale in colour.

*Spleen*.—Is somewhat enlarged, weighs 2 lbs. 11 ozs. *On section* the tissues are firm.

*Kidneys*.—Right weighs 1 lb. 3 ozs.; the left 1 lb. 5½ ozs. The capsules strip easily, there are no petechiæ on the surface of the organs, but on section the tissues are dark in colour.

*Stomach*.—The organ is half full of semi-digested food. *On section*, the *cuticular* portion is white in colour, the mucous membrane of the *villous* portion presents a pale rose colour, and the surface is covered with a material like white of egg. A small Spiroptera nest occupies a position midway between the line of demarcation and the pyloric opening.

*Small intestines*.—There are several small patches of congestion dotted over the mucous membrane, but there are no extravasations of blood.

*Large intestines*.—Present a healthy appearance.

*Bladder*.—Healthy.

#### HORSE No. CXXIII.

Grey Entire Horse from the Persian Gulf, aged 6 years, belonging to the Bombay Mounted Police. It was purchased on the 13th December 1891. The animal was quartered at Māhini from the 26th August to September 1st 1894; at Police lines, Byculla, from September 2nd to December 14th, on which latter date it was recognized to be ailing, and was immediately removed to the Parel Veterinary Hospital. During the above period eight measures of ground gram and three of bran were given, but one measure of Moong-Dall (boiled) was given in lieu of one of gram from 27th August to 28th October.

Ten pounds of gram and ten of dry grass from 1st to 15th September.

Sixteen pounds of gram and eight of dry grass from 16th to 30th September.

Thirty-five pounds of green grass from 1st to 21st October.

Previous and subsequent to the above mentioned periods 15 lbs. of dry grass was given.

23rd December, 7-30 A.M.—The animal arrived at the Laboratory Hospital, Poona.

*State on admission*.—The horse is in poor condition, and presents a very dull appearance. The visible mucous membranes are injected, the conjunctivæ are tinged an orange colour, and petechiated. The skin is hot, and the ordinary symptoms of fever are present. Temp. A.M. 40.8°C. The pulse is rapid, bounding and full, 72 per minute. Respirations are doubled in frequency and shallow, 32 per minute. There is some swelling and œdema of the sheath, scrotum and extremities; the latter are not tender on manipulation. The hæmatozoa are very numerous in the blood. The appetite is lost. Dung glairy. The animal was ordered Liq. Arsenicalis 3x night and morning.



| Month and Date. |    |     | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Medicine<br>Arsenic<br>(Grains.) |      | REMARKS.   |      |
|-----------------|----|-----|-----------------|--------|--------|--------|------|--------------|------|------------------------|----------------------------------|------|--|------|
|                 |    |     | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | A.M.                             | P.M. |  |      |
| 1894.           |    |     |                 |        |        |        |      |              |      |                        |                                  |      | A.M.   | P.M. |
| Decem.          | 23 | ... | ...             | 40.8   | 40.8   | ...    | 72   | ...          | 32   | Very nu-<br>merous.    | ...                              | v    | Conjunctivæ orange coloured, injected<br>and petechiated.                      |      |
| "               | 24 | ... | 39.0            | 39.5   | 39.1   | 44     | 64   | 24           | 28   | Few.                   | v                                | v    | Conjunctivæ yellow and petechiated.  |      |
| "               | 25 | ... | 38.1            | 38.5   | 38.7   | 40     | 56   | 12           | 36   | Absent.                | v                                | vi   | Do. do.  |      |
| "               | 26 | ... | 37.4            | 37.8   | 38.4   | 40     | 40   | 12           | 12   | "                      | vi                               | vi   | Right conjunctiva clearer, left, clear,<br>but yellow.                         |      |
| "               | 27 | ... | 37.7            | 38.4   | 38.2   | 48     | 44   | 8            | 12   | "                      | vi                               | vii  | Conjunctivæ orange and injected.   |      |
| "               | 28 | ... | 38.1            | 38.2   | 38.6   | 40     | 48   | 12           | 20   | "                      | vii                              | vii  | Do. do.  |      |
| "               | 29 | ... | 37.6            | 37.7   | 38.4   | 44     | 44   | 12           | 12   | "                      | vii                              | vii  | Do. do.  |      |
| "               | 30 | ... | 37.4            | 37.6   | 38.1   | 40     | 40   | 12           | 12   | "                      | ...                              | vii  | Do. do.  |      |
| "               | 31 | ... | 37.6            | 38.0   | 38.2   | 40     | 48   | 8            | 12   | "                      | vii                              | vii  | Do. do.  |      |
| 1895.           |    |     |                 |        |        |        |      |              |      |                        |                                  |      |  |      |
| January         | 1  | ... | 37.3            | 37.6   | 38.2   | 40     | 44   | 8            | 12   | "                      | vii                              | vii  | Do. do.  |      |
| "               | 2  | ... | 37.7            | 37.7   | 38.1   | 44     | 52   | 12           | 16   | "                      | vii                              | vii  | Do. do.  |      |
| "               | 3  | ... | 37.4            | 38.0   | 38.2   | 48     | 60   | 12           | 12   | "                      | vii                              | vii  | Do. do.  |      |
| "               | 4  | ... | 36.0            | 36.6   | 37.7   | 56     | 60   | 12           | 12   | "                      | ...                              | ...  | Do. do.  |      |
| "               | 5  | ... | 36.6            | 36.7   | 37.0   | 52     | 64   | 12           | 12   | "                      | ...                              | ...  | Do. do.  |      |
| "               | 6  | ... | 37.6            | 37.4   | 37.2   | 48     | 60   | 8            | 12   | "                      | ...                              | ...  | Right conjunctiva much injected, left,<br>less injected.                       |      |
| "               | 7  | ... | 37.2            | 38.2   | 38.3   | 64     | 60   | 24           | 12   | "                      | ...                              | ...  | Do. do.  |      |
| "               | 8  | ... | 37.7            | 38.0   | 38.2   | 36     | 60   | 12           | 16   | "                      | ...                              | ...  | Do. do.  |      |
| "               | 9  | ... | 37.4            | 37.8   | 37.8   | 36     | 40   | 12           | 12   | "                      | ...                              | ...  | Conjunctivæ injected, one extravasation<br>in both.                            |      |
| "               | 10 | ... | 37.6            | 37.8   | 38.1   | 36     | 36   | 12           | 9    | "                      | ...                              | ...  | Right conjunctiva traces of petechiæ.  |      |
| "               | 11 | ... | 37.8            | 37.8   | 37.8   | 32     | 36   | 9            | 12   | "                      | ...                              | iii  | Right conjunctiva slightly injected, left,<br>deeply injected.                 |      |
| "               | 12 | ... | 37.2            | 37.8   | 38.2   | 30     | 60   | 8            | 12   | "                      | iii                              | iii  | Do. do.  |      |
| "               | 13 | ... | 37.3            | 37.9   | 38.3   | 30     | 45   | 8            | 14   | "                      | iii                              | iii  | Do. do.  |      |
| "               | 14 | ... | 37.6            | 39.1   | 38.2   | 33     | 30   | 8            | 10   | "                      | iii                              | v    | Conjunctivæ deeply injected.   |      |
| "               | 15 | ... | 37.6            | 37.9   | 38.4   | 36     | 44   | 8            | 12   | "                      | v                                | v    | Do. do.  |      |
| "               | 16 | ... | 37.5            | 37.7   | 38.3   | 30     | 42   | 8            | 12   | "                      | v                                | v    | Do. do.  |      |
| "               | 17 | ... | 37.3            | 37.8   | 38.3   | 36     | 48   | 8            | 12   | "                      | v                                | v    | Conjunctivæ injected and petechiated.  |      |
| "               | 18 | ... | 37.2            | 37.5   | 38.1   | 36     | 44   | 8            | 12   | "                      | v                                | v    | Do. do.  |      |
| "               | 19 | ... | 36.5            | 37.5   | 38.4   | 40     | 60   | 8            | 24   | "                      | v                                | v    | Conjunctivæ injected, and traces of<br>petechiæ in both.                       |      |
| "               | 20 | ... | 37.1            | 37.6   | 38.4   | 40     | 44   | 8            | 12   | "                      | v                                | vi   | Do. do.  |      |
| "               | 21 | ... | 37.3            | 37.7   | 38.0   | 40     | 44   | 8            | 12   | "                      | vi                               | vi   | Conjunctivæ deeply injected.   |      |
| "               | 22 | ... | 37.3            | 37.4   | 37.7   | 40     | 52   | 8            | 8    | "                      | vi                               | vii  | Conjunctivæ less injected.   |      |
| "               | 23 | ... | 37.0            | 37.3   | 38.1   | 40     | 48   | 8            | 8    | "                      | vii                              | vii  | Do. do.  |      |
| "               | 24 | ... | 37.4            | 37.7   | 38.1   | 44     | 48   | 10           | 8    | "                      | vii                              | ...  | Conjunctivæ deeply injected. Continual<br>flapping of lower lip.               |      |
| "               | 25 | ... | 37.2            | 37.6   | 38.3   | 36     | 56   | 8            | 12   | "                      | ...                              | ...  | Do. do.  |      |
| "               | 26 | ... | 37.2            | 37.9   | 38.3   | 40     | 60   | 8            | 20   | "                      | ...                              | ...  | Do. do.  |      |
| "               | 27 | ... | 37.2            | 37.9   | 38.2   | 40     | 52   | 8            | 52   | "                      | ...                              | ii   | Do. do.  |      |
| "               | 28 | ... | 37.1            | 38.0   | 38.3   | 40     | 52   | 8            | 16   | "                      | ii                               | ii   | Conjunctivæ injected.  |      |
| "               | 29 | ... | 36.8            | 37.4   | 38.2   | 40     | 44   | 8            | 12   | "                      | ii                               | ii   | Do. do.  |      |
| "               | 30 | ... | 37.2            | 37.8   | 38.0   | 36     | 44   | 8            | 14   | "                      | ii                               | ii   | Conjunctivæ less injected.   |      |
| "               | 31 | ... | 37.2            | 37.8   | 37.7   | 36     | 44   | 12           | 16   | "                      | ii                               | ii   | Right conjunctiva less injected, left, more<br>deeply injected.                |      |
| February        | 1  | ... | 37.4            | 37.6   | 38.0   | 36     | 40   | 8            | 12   | "                      | ii                               | ii   | Conjunctivæ injected.  |      |
| "               | 2  | ... | 36.8            | 37.2   | 37.8   | 36     | 40   | 12           | 8    | "                      | ii                               | ii   | Conjunctivæ clearer.   |      |
| "               | 3  | ... | 37.3            | 37.4   | 38.1   | 36     | 40   | 8            | 12   | "                      | ii                               | ii   | Do. clear.   |      |
| "               | 4  | ... | 36.6            | 37.3   | 38.3   | 28     | 40   | 8            | 12   | "                      | ii                               | ii   | Do. do.  |      |
| "               | 5  | ... | 37.0            | 37.7   | 38.6   | 32     | 44   | 12           | 16   | "                      | ii                               | ii   | Do. do.  |      |
| "               | 6  | ... | 37.6            | 38.0   | 38.5   | 36     | 44   | 12           | 16   | "                      | ii                               | ii   | Conjunctivæ yellow and slightly injected.                                      |      |
| "               | 7  | ... | 37.6            | 38.1   | 38.2   | 36     | 36   | 8            | 20   | "                      | ii                               | ii   | Do. do.  |      |
| "               | 8  | ... | 37.2            | 38.1   | 38.3   | 32     | 44   | 8            | 20   | "                      | ii                               | ii   | Conjunctivæ yellow.  |      |
| "               | 9  | ... | 37.2            | 38.0   | 38.3   | 36     | 40   | 8            | 12   | "                      | ii                               | ii   | Right conjunctiva clearer, left, deeply<br>injected, nasal membranes injected. |      |
| "               | 10 | ... | 37.2            | 37.6   | 37.8   | 36     | 40   | 8            | 12   | "                      | ii                               | ii   | Conjunctivæ faintly yellow, no petechiæ.                                       |      |
| "               | 11 | ... | 36.6            | 37.4   | 37.9   | 32     | 44   | 12           | 12   | ...                    | ii                               | ii   | Right conjunctiva clear, left, traces of<br>petechiæ.                          |      |
| "               | 12 | ... | 37.2            | 37.6   | 38.2   | 36     | 44   | 8            | 24   | ...                    | ii                               | ii   | Conjunctivæ slightly injected, eyelids<br>swollen.                             |      |
| "               | 13 | ... | 37.2            | 38.0   | 38.2   | 36     | 44   | 8            | 32   | Few.                   | ii v iii                         |      | Animal dull; conjunctivæ unchanged.  |      |
| "               | 14 | ... | 37.7            | 38.7   | 38.9   | 36     | 44   | 12           | 44   | Absent.                | v                                | v    | Conjunctivæ faintly yellow.  |      |
| "               | 15 | ... | 37.6            | 38.0   | 37.8   | 40     | 40   | 16           | 28   | "                      | v                                | v    | Right conjunctiva one extravasation,<br>left, less yellow.                     |      |
| "               | 16 | ... | 37.5            | 38.2   | 38.1   | 36     | 40   | 12           | 20   | "                      | v                                | v    | Right conjunctiva clear, left, slightly<br>injected and yellow.                |      |
| "               | 17 | ... | 37.1            | 37.5   | 37.7   | 36     | 36   | 8            | 12   | "                      | v                                | v    | Do. do.  |      |
| "               | 18 | ... | 37.0            | 37.5   | 38.4   | 28     | 36   | 12           | 28   | "                      | v                                | vi   | Conjunctivæ yellow and injected.   |      |

| Month and Date. | Temperature° C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Medicine<br>Arsenic<br>(Grains.)     |      | REMARKS.   |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|------------------------|--------------------------------------|------|--|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | A.M.                                 | P.M. |  |
| 1895.           |                 |        |        |        |      |              |      |                        |                                      |      |  |
| February 19 ... | 37.5            | 37.8   | 38.0   | 40     | 36   | 12           | 28   | Absent.                | vi                                   | vi   | Right conjunctiva clearer, left, unchanged.  |
| " 20 ...        | 37.3            | 37.6   | 38.0   | 36     | 36   | 12           | 12   | "                      | vi                                   | vi   | Conjunctivæ dirty, no petechiæ.  |
| " 21 ...        | 36.9            | 37.5   | 38.2   | 36     | 40   | 12           | 16   | "                      | vi                                   | vi   | Do. do.  |
| " 22 ...        | 37.0            | 37.8   | 37.5   | 32     | 36   | 12           | 12   | "                      | vi                                   | vi   | Right conjunctiva clearer, left, injected.   |
| " 23 ...        | 37.3            | 37.7   | 37.9   | 36     | 40   | 8            | 16   | "                      | vi                                   | vi   | Conjunctivæ slightly injected.   |
| " 24 ...        | 37.4            | 37.7   | 38.1   | 36     | 40   | 8            | 16   | "                      | vi                                   | vi   | Do.  |
| " 25 ...        | 37.0            | 37.1   | 38.0   | 40     | 52   | 8            | 20   | "                      | vi                                   | vi   | Do.  |
| " 26 ...        | 37.3            | 38.0   | 38.1   | 36     | 48   | 12           | 28   | "                      | vi                                   | vi   | Do.  |
| " 27 ..         | 37.1            | 38.1   | 38.0   | 36     | 40   | 10           | 20   | "                      | vi                                   | vi   | Conjunctivæ deeply injected.   |
| " 28 ...        | 37.2            | 37.7   | 38.1   | 36     | 40   | 8            | 24   | "                      | vi                                   | vi   | Do.  |
| March 1 ...     | 37.2            | 38.2   | 38.1   | 36     | 52   | 8            | 54   | "                      | vi                                   | vi   | Conjunctivæ less injected.   |
| " 2 ...         | 37.3            | 38.1   | 38.3   | 36     | 44   | 8            | 20   | "                      | vi                                   | vi   | Conjunctivæ injected, eyelids swollen.   |
| " 3 ...         | 37.3            | 38.2   | 38.2   | 36     | 48   | 8            | 28   | "                      | vi                                   | vi   | Conjunctivæ clearer, nasal membranes injected.                                     |
| " 4 ...         | 37.6            | 38.2   | 38.4   | 36     | 44   | 8            | 24   | "                      | ...                                  | ...  | Right conjunctiva clear, left, dirty and injected.                                 |
| " 5 ...         | 37.2            | 38.1   | 38.5   | 32     | 44   | 8            | 28   | "                      | ...                                  | ...  | Conjunctivæ injected, eyelids swollen.   |
| " 6 ...         | 37.5            | 38.3   | 38.3   | 32     | 36   | 12           | 28   | "                      | ...                                  | ...  | Do. do.  |
| " 7 ...         | 37.9            | 38.5   | 38.8   | 32     | 44   | 12           | 32   | "                      | ...                                  | ...  | Do. do.  |
| " 8 ...         | 38.2            | 39.2   | 39.4   | 40     | 48   | 20           | 28   | "                      | Ammon:<br>Chlor 3ii                  |      |  |
| " 9 ...         | 38.5            | 39.5   | 39.8   | 44     | 52   | 20           | 24   | "                      | Potash Nit.<br>3ii.<br>Arsenic.<br>v |      | Right conjunctiva deeply injected, left, yellow. Ammon: Chlor: 3ii.                |
| " 10 ...        | 38.2            | 39.5   | 39.9   | 36     | 40   | 8            | 40   | "                      | v                                    | v    | Right conjunctiva orange, left, yellow.  |
| " 11 ...        | 38.3            | 39.5   | 40.1   | 32     | 44   | 12           | 16   | "                      | v                                    | v    | Right conjunctiva orange and two petechiæ, left, unchanged.                        |
| " 12 ...        | 38.9            | 39.5   | 39.5   | 36     | 36   | 8            | 12   | "                      | ...                                  | ...  | Right conjunctiva orange and petechiated, left, orange. Weakness in hind quarters. |
| " 13 ...        | 38.0            | 39.5   | 38.7   | 36     | 40   | 12           | 16   | "                      | ...                                  | ...  |  |
| " 14 ...        | 37.5            | 38.8   | 38.7   | 44     | 80   | 12           | 16   | "                      | ...                                  | ...  | Do. do. constipation.  |
| " 15 ...        | 38.7            | ...    | ...    | 92     | ...  | 28           | ...  | Few.                   | ...                                  | ...  | Do. do. do.  |
| " 16 ..         |                 |        |        |        |      | Death 2      | A.M. |                        |                                      |      |  |

16th March 1895.—Autopsy eight hours after death. Body fairly nourished, no œdema of the extremities.

*Thorax*.—There is no fluid in the pleural cavities, and there are no pleuritic adhesions.

*Lungs*.—The organs are fully filled with air, and are the seat of some localized emphysema at the apices. They present a pale pink colour over their entire surface, and there is a total absence of blood extravasations.

The *pericardial sac* contains a few c.c. of a clear fluid.

*Heart*.—Weights 5 lbs. 4 ozs. *On section* the right auricle and ventricle are blood-stained. The left auricle and ventricle are contracted, the walls of the latter cavity present a mottled appearance, probably due to a fatty change. The peritoneal cavity is free from fluid.

*Liver*.—Weights 10 lbs. 5 ozs. There are signs of old perihepatitis. *On section* the tissues of the organ are dark in colour, and somewhat friable.

*Spleen*.—Weights 2 lbs. 12 ozs, is somewhat enlarged. *On section*, the tissues are firm, and present a healthy appearance.

*Kidneys*.—Right weighs 23 ozs.; the left 22 ozs. The capsules strip easily, but on section the organs are somewhat pale in colour.

*Stomach*.—Distended with semi-digested food. *On section* the *cuticular* portion of the organ presents a normal appearance, but the mucous membrane of the *villous* portion is of a rose colour, more pronounced, bordering on the line of demarcation.

*Intestines*.—Present a healthy appearance.

*Bladder*.—Healthy.

#### HORSE No. CXXIV.

Grey Entire Horse from Persian Gulf, aged 7 years, belonging to the Bombay Mounted Police. It was purchased on 16th July 1894. During the time which elapsed between the date of purchase and that of recognition of disease, the animal was located in the following places:—

Oomar Jumal's stables, Bellasis Road... 16th July to 19th July 1894.

Pallonjee's Hotel stables ... 20th " to 25th " "

Walkeshwar ... 26th " to 15th October 1894.

Near Police Lines ... 16th October to 25th " "

Bellasis Road stables ... 26th " to 13th November 1894.

Police Lines ... 14th November to 16th " "

Bellasis Road stables ... 17th " to 6th December 1894.



At the latter stables the horse was observed to be ailing and was removed to Parel Veterinary Hospital, where the hæmatozoon of Surra was discovered in its blood.

December 23rd, 1894.—The animal arrived at the Laboratory Hospital, Poona.

*State on admission.*—The horse is in poor condition, and presents a dull appearance. The usual symptoms of fever are present. The visible mucous membranes are injected, the conjunctivæ are the seat of a few petechiæ, and lachrymation is excessive. The skin is hot. Temp. A.M. 40·3°C. The pulse is frequent, 68, and the respirations are rapid and shallow, 56 in the minute. There is some swelling and œdema of the extremities, but they are not tender on manipulation. The hæmatozoa are few in the blood. The appetite is poor. The fæces are normal in appearance.

The animal was ordered Liquor Arsenicalis 3x night and morning.

| Month and Date. |        | Temperature °C. |        |        | Pulse. |      | Respiration.    |      | Hæmatozoa in Blood. | Medicine Arsenic (Grains.) |      | REMARKS.   |
|-----------------|--------|-----------------|--------|--------|--------|------|-----------------|------|---------------------|----------------------------|------|--|
|                 |        | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.            | P.M. |                     | A.M.                       | P.M. |  |
| 1894.           |        |                 |        |        |        |      |                 |      |                     |                            |      |  |
| December        | 23 ... | ...             | 40·5   | 40·5   | ...    | 68   | ...             | 56   | Few.                | ...                        | v    | Conjunctivæ injected and petechiated ; lachrymation excessive.           |
| "               | 24 ... | 38·6            | 38·6   | 39·0   | 52     | 60   | 20              | 56   | "                   | v                          | v    | Both conjunctivæ pale and petechiated. Hind limbs swollen and œdematous. |
| "               | 25 ... | 39·1            | 39·5   | 39·7   | 56     | 48   | 24              | 16   | "                   | v                          | vi   | Conjunctivæ yellow and petechiated. Hind limbs and testicles swollen.    |
| "               | 26 ... | 38·4            | 38·8   | 38·8   | 48     | 52   | 12              | 28   | Absent.             | vi                         | vi   | Conjunctivæ clearer, but pallid do.                                      |
| "               | 27 ... | 38·2            | 38·6   | 39·0   | 52     | 52   | 12              | 24   | "                   | vi                         | vii  | Do. do.  |
| "               | 28 ... | 38·2            | 38·3   | 38·6   | 48     | 56   | 12              | 40   | "                   | vii                        | vii  | Do. testicles reduced in size.   |
| "               | 29 ... | 38·1            | 38·1   | 38·6   | 48     | 52   | 12 <sup>2</sup> | 40   | "                   | vii                        | vii  | Conjunctivæ pale, but injected ; testicles normal.                       |
| "               | 30 ... | 37·7            | 37·7   | 38·3   | 48     | 48   | 12              | 24   | "                   | ...                        | vii  | Do. do.  |
| "               | 31 ... | 37·4            | 38·0   | 38·3   | 48     | 52   | 12              | 44   | "                   | vii                        | vii  | Do. do.  |
| 1895.           |        |                 |        |        |        |      |                 |      |                     |                            |      |  |
| January         | 1 ...  | 37·7            | 37·7   | 38·1   | 44     | 52   | 8               | 24   | "                   | vii                        | vii  | Do. do.  |
| "               | 2 ...  | 37·5            | 38·0   | 38·2   | 44     | 48   | 8               | 12   | "                   | vii                        | vii  | Do. do.  |
| "               | 3 ...  | 37·2            | 37·7   | 38·2   | 40     | 44   | 12              | 16   | "                   | vii                        | vii  | Do. do.  |
| "               | 4 ...  | 37·4            | 37·7   | 38·0   | 40     | 40   | 8               | 16   | "                   | vii                        | vii  | Do. do.  |
| "               | 5 ...  | 37·4            | 37·5   | 38·1   | 40     | 48   | 12              | 12   | "                   | vii                        | vii  | Do. do.  |
| "               | 6 ...  | 37·5            | 37·5   | 37·8   | 44     | 40   | 12              | 16   | "                   | vii                        | ...  | Conjunctivæ clear, but pallid.   |
| "               | 7 ...  | 37·7            | 38·1   | 38·1   | 44     | 40   | 12              | 28   | "                   | ...                        | ...  | Do.  |
| "               | 8 ...  | 37·2            | 37·8   | 37·8   | 36     | 40   | 12              | 20   | "                   | ...                        | ...  | Do.  |
| "               | 9 ...  | 37·0            | 37·4   | 37·5   | 36     | 40   | 12              | 12   | "                   | ...                        | ...  | Do.  |
| "               | 10 ... | 37·4            | 37·4   | 37·7   | 36     | 36   | 12              | 12   | "                   | ...                        | ...  | Do.  |
| "               | 11 ... | 37·5            | 37·6   | 37·8   | 34     | 36   | 8               | 12   | "                   | ...                        | iii  | Do.  |
| "               | 12 ... | 37·2            | 37·7   | 37·8   | 28     | 36   | 8               | 12   | "                   | iii                        | ...  | Do.  |
| "               | 13 ... | 37·5            | 37·8   | 38·2   | 33     | 34   | 10              | 24   | "                   | i ss                       | iii  | Do.  |
| "               | 14 ... | 37·6            | 37·7   | 37·9   | 36     | 36   | 7               | 8    | "                   | i                          | iii  | Do.  |
| "               | 15 ... | 37·7            | 37·9   | 38·2   | 30     | 40   | 8               | 10   | "                   | iii                        | ...  | Do.  |
| "               | 16 ... | 37·5            | 37·7   | 38·4   | 36     | 36   | 8               | 12   | "                   | iii                        | iv   | Do.  |
| "               | 17 ... | 37·5            | 37·6   | 38·2   | 32     | 40   | 12              | 12   | "                   | iv                         | iv   | Do.  |
| "               | 18 ... | 37·4            | ...    | ...    | 32     | ...  | 8               | ...  | "                   | iv                         | iv   | Right conjunctiva clear, left, traces of petechiæ.                       |
| "               | 19 ... | 36·4            | 38·2   | 38·8   | 40     | 44   | 12              | 14   | "                   | iv                         | iv   | Conjunctivæ clear.   |
| "               | 20 ... | 37·7            | 38·5   | 38·5   | 36     | 40   | 12              | 16   | "                   | iv                         | iv   | Do. but pallid.  |
| "               | 21 ... | 37·9            | 37·9   | 37·8   | 36     | 40   | 12              | 12   | "                   | iv                         | v    | Do.  |
| "               | 22 ... | 37·6            | 37·7   | 38·0   | 40     | 40   | 8               | 12   | "                   | v                          | vi   | Conjunctivæ slightly injected.   |
| "               | 23 ... | 37·8            | 37·8   | 38·5   | 40     | 44   | 8               | 12   | "                   | vi                         | vi   | Do.  |
| "               | 24 ... | 37·5            | 37·3   | 38·6   | 40     | 48   | 12              | 8    | "                   | vi                         | vi   | Do.  |
| "               | 25 ... | 37·7            | 38·1   | 38·7   | 36     | 50   | 8               | 32   | "                   | vi                         | vi   | Do.  |
| "               | 26 ... | 37·6            | 38·3   | 38·5   | 40     | 48   | 12              | 32   | "                   | vi                         | vi   | Right conjunctiva traces of petechiæ, left, injected.                    |
| "               | 27 ... | 37·7            | 38·4   | 38·4   | 44     | 48   | 16              | 44   | "                   | vi                         | v    | Do. do.  |
| "               | 28 ... | 37·0            | 38·1   | 38·3   | 40     | 48   | 8               | 16   | "                   | v                          | iv   | Conjunctivæ slightly petechiated.  |
| "               | 29 ... | 37·3            | 37·7   | 38·0   | 36     | 40   | 16              | 28   | "                   | iv                         | iv   | Right conjunctiva clearer, left, one extravasation.                      |
| "               | 30 ... | 37·4            | 38·0   | 38·2   | 36     | 44   | 8               | 16   | "                   | iv                         | iii  | Right conjunctiva clear, left, unchanged.                                |
| "               | 31 ... | 37·7            | 38·3   | 37·8   | 36     | 48   | 12              | 16   | "                   | iii                        | iii  | Conjunctivæ injected.  |
| February        | 1 ...  | 37·6            | 38·2   | 38·3   | 40     | 48   | 8               | 12   | "                   | iii                        | iii  | Conjunctivæ slightly injected.   |
| "               | 2 ...  | 37·2            | 37·8   | 37·8   | 36     | 52   | 12              | 12   | "                   | iii                        | iii  | Right conjunctiva clearer, left, injected.                               |
| "               | 3 ...  | 37·2            | 37·7   | 38·2   | 36     | 40   | 8               | 32   | "                   | iii                        | iii  | Do. do.  |
| "               | 4 ...  | 37·0            | 37·9   | 38·4   | 36     | 44   | 8               | 20   | "                   | iii                        | iii  | Do. do.  |
| "               | 5 ...  | 37·5            | 38·3   | 38·9   | 32     | 44   | 12              | 28   | "                   | iii                        | iii  | Do. do.  |
| "               | 6 ...  | 37·5            | 38·2   | 38·9   | 32     | 40   | 12              | 16   | "                   | iii                        | iii  | Conjunctivæ clear.   |
| "               | 7 ...  | 37·9            | 38·4   | 39·1   | 48     | 48   | 12              | 16   | "                   | iii                        | iii  | Conjunctivæ pallid, traces of petechiæ.                                  |
| "               | 8 ...  | 37·2            | 38·5   | 38·3   | 48     | 68   | 12              | 28   | "                   | iii                        | ...  | Potass. Iodide 3iii.   |
| "               | 9 ...  |                 |        |        |        |      | Death at 5 A.M. |      |                     |                            |      |  |



9th February 1895.—Autopsy seven hours after death.

Body somewhat emaciated, absence of œdema from the under-surface of the abdomen and extremities.

Lungs.—Present a healthy appearance.

Heart.—Weighs 5 lbs. 12½ ozs. On section there is nothing pathological to notice.

The peritoneal cavity is free from fluid.

Liver.—Weighs 10 lbs. 10½ ozs., signs of old perihepatitis on the convex surface. On section tissues appear healthy.

Spleen.—Weighs 2 lbs. 1½ ozs., tissues firm on section.

Kidneys.—Right weighs 1 lb. 3 ozs.; the left 1 lb. 1½ ozs.

Stomach.—The cuticular portion of the organ presents a normal appearance. The mucous membrane of the villous portion is the seat of catarrhal inflammation.

Large and Small intestines.—Healthy.

Bladder.—Healthy.

#### HORSE No. CXXV.

Grey Persian Gulf Gelding, aged, belonging to the Bombay Tramway Company, was noticed to be ailing with fever, and was removed to the Infirmary towards the end of January 1895. The hæmatozoon was discovered on microscopical examination of the blood on the 28th January.

30th January.—The animal arrived at the Laboratory Hospital, Poona.

State on admission.—The horse is in fair condition, and is the subject of "overshot" fetlocks. The ordinary symptoms of fever are present, the visible mucous membranes are orange in colour and injected, the conjunctivæ petechiated, and there is excessive lachrymation. The skin is hot. Temp. A.M. 40.2°C. The pulse full and somewhat hard, 60 beats in the minute, but the respirations are normal, 16 in the minute. The extremities are the seat of some swelling and œdema, but they are not tender on manipulation. The appetite is good. The excreta is healthy in appearance. The hæmatozoa are numerous in the blood, but the red corpuscles form rouleaux, and the white are not increased in number.

The animal was ordered Liquor Arsenicalis 3x night and morning.

| Month and Date. | Temperature °C.  |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine Arsenic (Grains.) | REMARKS.  |
|-----------------|------------------|--------|--------|--------|------|--------------|------|---------------------|----------------------------|---|
|                 | A.M.             | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |                            |   |
| 1895.           |                  |        |        |        |      |              |      |                     | A.M. P.M.                  |   |
| January 30 ...  | 40.1             | 40.0   | 40.5   | 60     | 52   | 16           | 20   | Numerous.           | ... v                      | Conjunctivæ yellow, injected; sheath swollen, œdema beneath abdomen.        |
| " 31 ...        | 38.8             | 38.9   | 38.2   | 48     | 44   | 36           | 28   | Absent.             | v v                        | Do. do.   |
| February 1 ...  | 37.2             | 39.0   | 38.6   | 44     | 52   | 20           | 28   | "                   | v vi                       | Conjunctivæ orange and injected.  |
| " 2 ...         | 38.3             | 38.2   | 38.4   | 52     | 56   | 20           | 20   | "                   | vi vi                      | Right conjunctiva yellow, left, slightly injected.                          |
| " 3 ...         | 38.0             | 38.1   | 38.7   | 56     | 68   | 16           | 44   | "                   | vi ...                     | Right conjunctiva traces of petechiæ, left, injected. Diarrhœa.             |
| " 4 ...         | 37.5             | 38.6   | 38.8   | 112    | 80   | 68           | ...  | "                   | ... ...                    | Conjunctivæ deeply injected, brick red colour, several dark extravasations. |
| " 5 ...         | Death at 12 P.M. |        |        |        |      |              |      |                     |                            |   |

4th February 1895.—Autopsy twelve hours after death.

Body very well nourished. There is a thick layer of adipose tissue covering the abdominal walls. All the tissues of the body are stained yellow in colour.

Thorax.—There is no fluid in the pleural cavities, and there are no pleuritic adhesions.

Lungs.—Are of a reddish pink colour, fully distended with air. The pericardial sac contains about 30 c.c. of an orange-coloured fluid.

Heart.—Is very large, weighs 6 lbs. 7½ ozs., after removal of the contained blood and clots. Externally and on section there is nothing pathological to notice.

The peritoneal cavity is free from fluid.

Liver.—Weighs 13 lbs. 10 ozs. On the convex and concave surfaces of the organ, numerous lymphatic vessels are raised above the surface and are injected with a transparent fluid. On section, the tissues are very pale and friable.

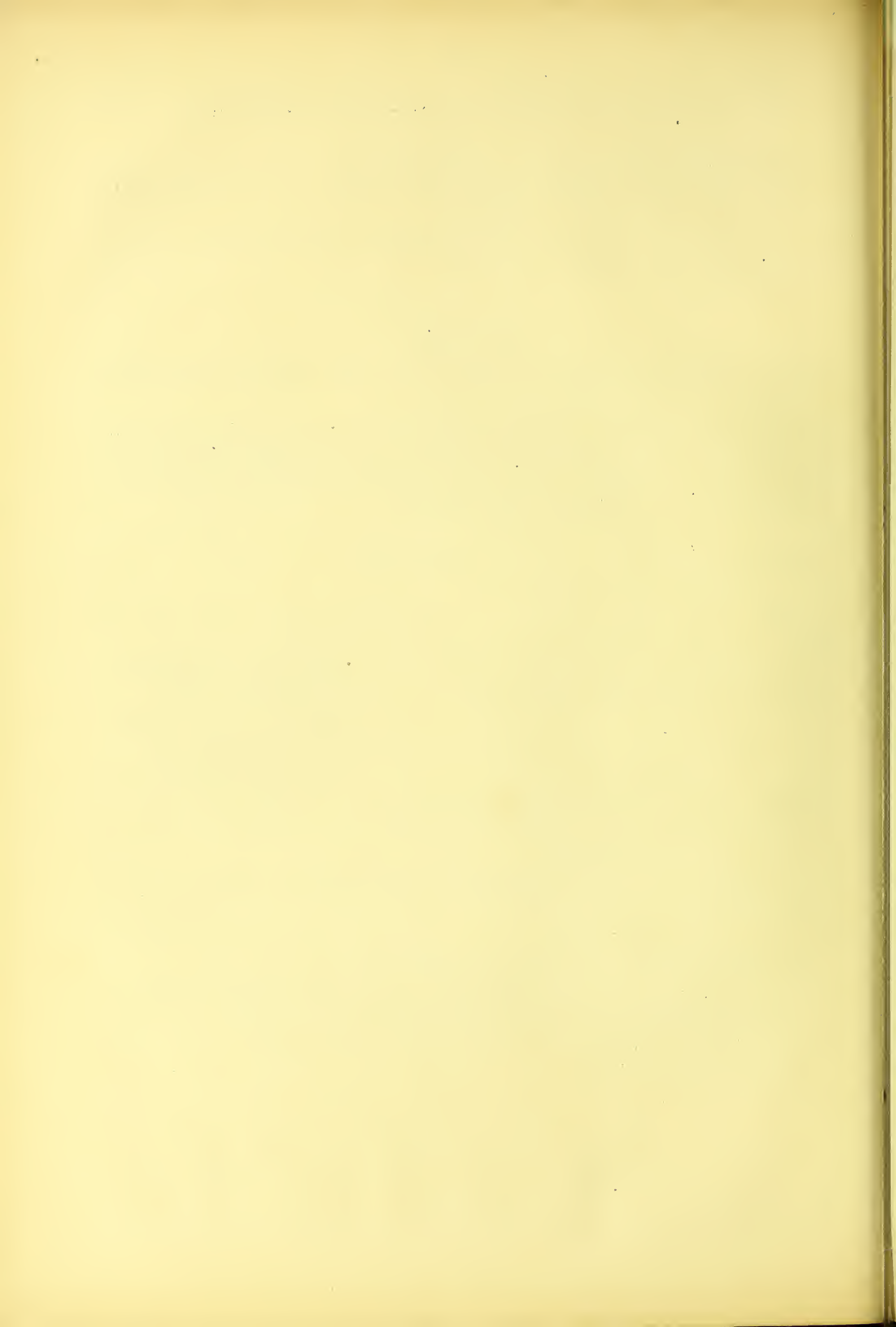
Spleen.—Weighs 2 lbs. 1 oz., is normal in size, firm on section, and contains little or no blood.

Kidneys.—The right weighs 1 lb. 5½ ozs., the left 1 lb. 4¾ ozs. The capsules are easily separated, surface smooth, the superficial veins are slightly marked. The organs on section present a very pale appearance.

Stomach.—Presents a healthy appearance.

Large and small Intestines.—Healthy.

Bladder.—Healthy.



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A.

HORSE SURRA

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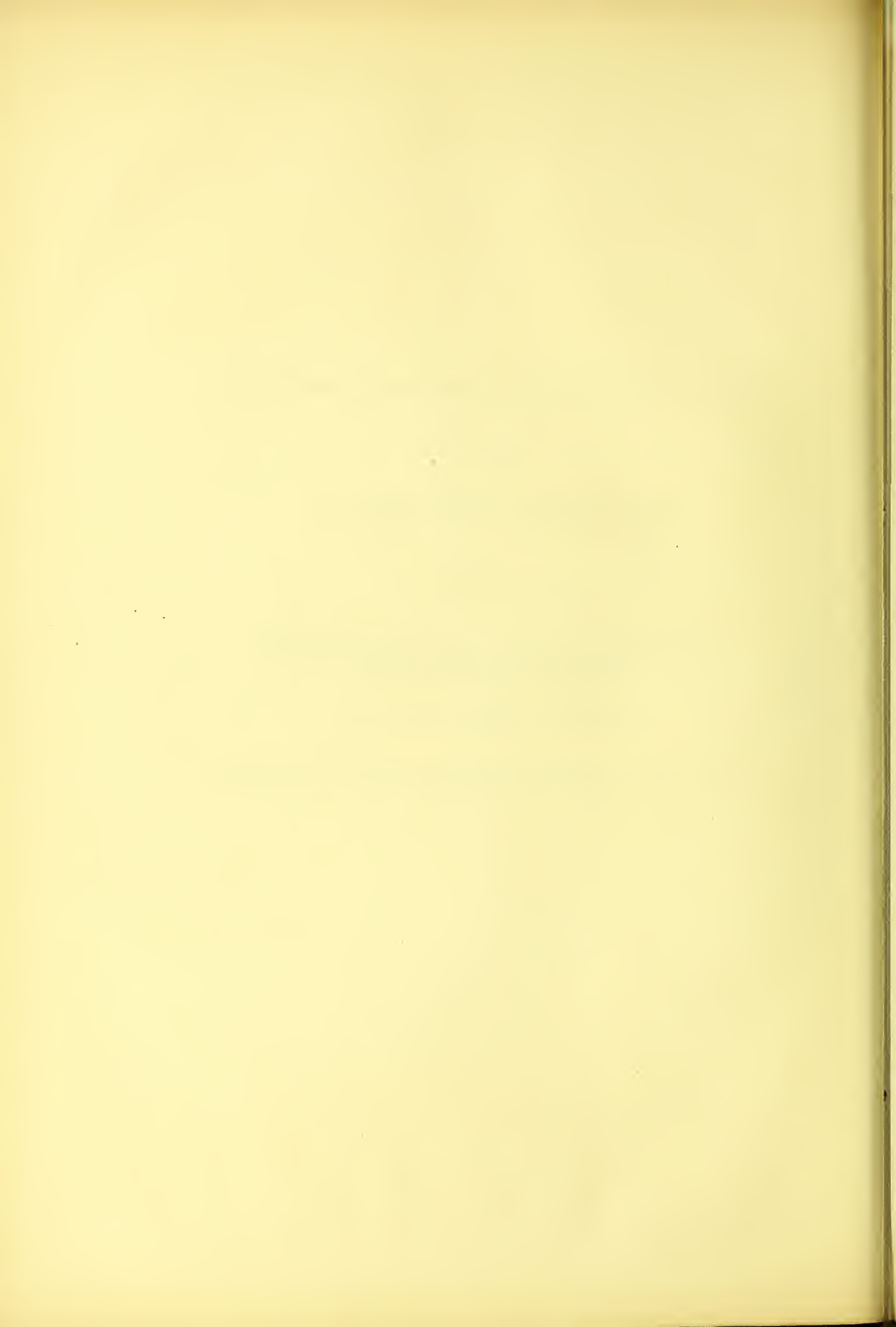
APPENDIX II.

TREATMENT OF ANIMALS INOCULATED BY GASTRIC  
INGESTION OF SOILED BLOOD.

HORSES Nos. LXXXIX (CURED), XCVI.

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## HORSE No. LXXXIX.

Australian Gelding, aged. This animal was a caster on account of lameness, but was otherwise in good health and condition.

This experiment was undertaken with a view to determine:—

- (i) Whether the administration of Arsenic immediately upon the appearance of the Surra hæmatozoon would prove destructive to the organism, when the disease was contracted by gastric ingestion of blood, in a manner somewhat similar to that in which it ordinarily occurs in nature.
- (ii) The ratio between the quantity of water drunk, irrespective of the amount in the fodder, and quantity of urine passed during the 24 hours.
- (iii) The excretion of Nitrogen as Hippuric Acid and urea, during the periods of health, latent period of the disease, paroxysms and intermissions, the animal being under treatment during the latter two periods.

| Date.         | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in the Blood. | REMARKS.   |
|---------------|-----------------|--------|--------|--------|------|--------------|------|-----------------|-------------------------|--|
|               | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                         |  |
| 1893.         |                 |        |        |        |      |              |      |                 |                         |  |
| Novem. 19...  | 35.6            | 36.6   | 37.0   | 28     | 28   | 4            | 16   | ...             | ...                     |  |
| " 20...       | 35.5            | 36.0   | 36.4   | 24     | 28   | 8            | 12   | ...             | ...                     |  |
| " 21...       | 35.4            | 37.0   | 37.0   | 24     | 28   | 12           | 12   | ...             | ...                     |  |
| " 22...       | 35.4            | 36.2   | 37.0   | 24     | 24   | 8            | 12   | ...             | ...                     |  |
| " 23...       | 35.5            | 36.4   | 37.0   | 28     | 28   | 12           | 12   | ...             | ...                     |  |
| " 24...       | 35.6            | 36.8   | 37.2   | 24     | 28   | 8            | 24   | ...             | ...                     |  |
| " 25...       | 35.8            | 36.4   | 36.4   | 24     | 44   | 8            | 16   | ...             | Absent.                 |  |
| " 26...       | 35.4            | 37.0   | 36.8   | 28     | 36   | 12           | 20   | ...             | "                       |  |
| " 27...       | 35.8            | 37.3   | 36.8   | 24     | 36   | 12           | 16   | ...             | "                       |  |
| " 28...       | 35.1            | 36.4   | 36.8   | 24     | 32   | 9            | 21   | ...             | "                       |  |
| " 29...       | 36.0            | 37.5   | 37.5   | 22     | 28   | 12           | 16   | ...             | " ...                   | 29th.—Conjunctivæ slightly congested, but free from petechiæ.  |
| " 30...       | 36.5            | 37.2   | 37.6   | 24     | 30   | 8            | 28   | ...             | "                       |  |
| December 1... | 36.6            | 38.6   | 39.3   | 27     | 30   | 8            | 36   | 1               | Few ...                 | 1st.—Both conjunctivæ congested and left, slightly petechiated.  |
| " 2...        | 39.0            | 39.8   | 39.8   | 36     | 44   | 9            | 24   | 2               | Numerous.               |  |
| " 3...        | 38.9            | 39.7   | 40.3   | 42     | 48   | 8            | 18   | 3               | "                       |  |
| " 4...        | 40.0            | 39.2   | 39.0   | 27     | 15   | 14           | 12   | 4               | Very numerous.          | 4th.—Both conjunctivæ congested and petechiated.   |
| " 5...        | 38.3            | 38.6   | 39.5   | 44     | 44   | 16           | 18   | 5               | Few ...                 | 5th.—Animal bright and appetite good, but there is a falling off in condition.                             |
| " 6...        | 35.6            | 38.0   | 36.8   | 56     | 36   | 10           | 18   | 6               | Absent.                 | 6th.—Petechiæ disappearing.  |
| " 7...        | 36.2            | 37.2   | 36.8   | 35     | 45   | 11           | 18   | 7               | "                       |  |
| " 8...        | 36.2            | 36.8   | 37.6   | 30     | 35   | 14           | 7    | 8               | "                       |  |
| " 9...        | 35.4            | 36.5   | 37.0   | 30     | 33   | 12           | 13   | 9               | " ...                   | 9th.—Both conjunctivæ congested, but petechiæ have disappeared.  |
| " 10...       | 36.2            | 36.2   | 36.8   | 32     | 30   | 11           | 15   | 10              | "                       |  |
| " 11...       | 36.0            | 36.4   | 37.2   | 36     | 35   | 12           | 16   | 11              | "                       |  |
| " 12...       | 36.0            | 36.2   | 37.6   | 32     | 40   | 15           | 13   | 12              | " ...                   | 12th.—The animal continues to lose flesh, visible mucous membranes congested. The urine contains some pus. |
| " 13...       | 36.2            | 36.2   | 36.9   | 34     | 35   | 14           | 22   | 13              | "                       |  |
| " 14...       | 36.4            | 36.8   | 36.6   | 36     | 40   | 16           | 17   | 14              | "                       |  |
| " 15...       | 36.2            | 36.8   | 37.3   | 36     | 32   | 15           | 13   | 15              | " ...                   | 15th.—Pus in urine continues.  |
| " 16...       | 35.8            | 36.0   | 37.6   | 32     | 36   | 12           | 19   | 16              | " ...                   | 16th.—Visible mucous membranes much congested, watery discharge from the right eye; much pus in urine.     |
| " 17...       | 36.0            | 37.2   | 37.4   | 40     | 51   | 15           | 20   | 17              | " ...                   | 17th.—Eyes swollen and dull, conjunctivæ congested, watery discharge continues; no pus in urine.           |
| " 18...       | 35.8            | 36.8   | 37.0   | 38     | 31   | 18           | 15   | 18              | " ...                   | 18th.—Condition of eyes unchanged.   |
| " 19...       | 35.8            | 36.1   | 37.6   | 35     | 40   | 15           | 20   | 19              | " ...                   | 19th.—Do. do.  |
| " 20...       | 35.6            | 35.8   | 37.2   | 36     | 27   | 24           | 17   | 20              | " ...                   | 20th.—Animal looking brighter but is thin, eyes less swollen, conjunctivæ congested.                       |
| " 21...       | 35.6            | 36.1   | 37.2   | 30     | 35   | 14           | 15   | 21              | "                       |  |
| " 22...       | 35.8            | 36.2   | 37.4   | 36     | 38   | 16           | 16   | 22              | "                       |  |
| " 23...       | 36.2            | 36.4   | 36.8   | 36     | 40   | 16           | 11   | 23              | "                       |  |
| " 24...       | 35.8            | 36.8   | 37.6   | 32     | 34   | 15           | 16   | 24              | "                       |  |
| " 25...       | 36.4            | 36.7   | 37.6   | 38     | 30   | 14           | 15   | 25              | " ...                   | 25th.—Conjunctivæ congested.   |

| Date,         | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in the Blood. | REMARKS.   |
|---------------|-----------------|--------|--------|--------|------|--------------|------|-----------------|-------------------------|--|
|               | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                         |  |
| 1893.         |                 |        |        |        |      |              |      |                 |                         |  |
| Decem. 26...  | 36.0            | 36.8   | 37.3   | 44     | 30   | 20           | 14   | 26              | Absent.                 |  |
| " 27...       | 36.1            | 36.9   | 37.6   | 34     | 35   | 18           | 20   | 27              |                         |  |
| " 28...       | 36.0            | 36.8   | 38.3   | 30     | 38   | 18           | 18   | 28              |                         |  |
| " 29...       | 36.3            | 36.9   | 38.7   | 33     | 38   | 18           | 22   | 29              |                         |  |
| " 30...       | 36.2            | 37.1   | 38.0   | 30     | 40   | 19           | 18   | 30              |                         |  |
| " 31...       | 36.3            | 37.2   | 38.2   | 30     | 38   | 16           | 20   | 31              |                         |  |
| 1894.         |                 |        |        |        |      |              |      |                 |                         |  |
| January 1...  | 35.4            | 36.1   | 36.8   | 36     | 30   | 12           | 23   | 32              | "                       |  |
| " 2...        | 35.3            | 37.0   | 37.5   | 44     | 52   | 8            | 12   | 33              | "                       | 2nd.—Conjunctivæ less congested.   |
| " 3...        | 36.8            | 37.3   | 38.1   | 36     | 44   | 8            | 22   | 34              | "                       |  |
| " 4...        | 37.0            | 37.2   | 37.7   | 44     | 48   | 8            | 12   | 35              | "                       |  |
| " 5...        | 37.2            | 37.4   | 37.4   | 36     | 48   | 8            | 16   | 36              | "                       | 5th.—Congestion of conjunctivæ increased, and slight discharge from the eyes.  |
| " 6...        | 37.3            | 37.5   | 37.7   | 40     | 44   | 8            | 12   | 37              | "                       |  |
| " 7...        | 36.8            | 37.2   | 37.6   | 41     | 40   | 10           | 16   | 38              | "                       |  |
| " 8...        | 36.5            | 37.0   | 37.7   | 40     | 40   | 8            | 12   | 39              | "                       |  |
| " 9...        | 36.3            | 36.8   | 38.1   | 44     | 48   | 9            | 28   | 40              | "                       | 9th.—Congestion of the conjunctivæ unchanged ; there is irritation of the hind quarters and tail.  |
| " 10...       | 36.2            | 36.7   | 37.6   | 36     | 44   | 16           | 12   | 41              | "                       |  |
| " 11...       | 36.5            | 37.1   | 36.8   | 40     | 36   | 8            | 12   | 42              | "                       |  |
| " 12...       | 36.4            | 36.6   | 37.6   | 36     | 44   | 8            | 10   | 43              | "                       |  |
| " 13...       | 36.8            | 37.4   | 37.3   | 44     | 44   | 12           | 9    | 44              | "                       |  |
| " 14...       | 36.2            | 37.1   | 37.4   | 48     | 40   | 12           | 16   | 45              | "                       |  |
| " 15...       | 36.6            | 37.2   | 38.2   | 36     | 48   | 8            | 12   | 46              | "                       |  |
| " 16...       | 36.7            | 37.2   | 37.5   | 40     | 36   | 12           | 12   | 47              | "                       | 16th.—Conjunctivæ less congested, irritation of hind quarters continues.   |
| " 17...       | 36.5            | 37.1   | 37.8   | 36     | 44   | 12           | 20   | 48              | "                       |  |
| " 18...       | 37.2            | 37.6   | 37.6   | 40     | 44   | 8            | 12   | 49              | "                       |  |
| " 19...       | 36.3            | 37.5   | 37.6   | 48     | 52   | 8            | 16   | 50              | "                       |  |
| " 20...       | 36.7            | 37.6   | 38.0   | 48     | 52   | 8            | 24   | 51              | "                       |  |
| " 21...       | 36.4            | 36.5   | 36.8   | 40     | 48   | 8            | 16   | 52              | "                       |  |
| " 22...       | 36.1            | 36.5   | 36.7   | 40     | 40   | 8            | 12   | 53              | "                       |  |
| " 23...       | 36.0            | 36.8   | 37.4   | 36     | 48   | 8            | 16   | 54              | "                       |  |
| " 24...       | 36.7            | 37.0   | 37.7   | 36     | 44   | 9            | 20   | 55              | "                       | 24th.—Left conjunctiva presents one extravasation, right conjunctiva slightly congested.   |
| " 25...       | 36.6            | 37.0   | 38.0   | 44     | 44   | 8            | 20   | 56              | "                       | 25th.—Both conjunctivæ slightly petechiated ; animal continues to lose flesh.  |
| " 26...       | 37.0            | 37.2   | 37.4   | 40     | 40   | 8            | 16   | 57              | "                       |  |
| " 27...       | 36.3            | 37.0   | 37.8   | 40     | 44   | 9            | 24   | 58              | "                       |  |
| " 28...       | 36.8            | 37.2   | 37.7   | 36     | 44   | 8            | 20   | 59              | "                       |  |
| " 29...       | 37.1            | 37.2   | 37.5   | 36     | 40   | 8            | 16   | 60              | "                       |  |
| " 30...       | 37.0            | 37.0   | 38.0   | 40     | 48   | 8            | 24   | 61              | "                       |  |
| " 31...       | 37.0            | 37.3   | 37.7   | 48     | 44   | 8            | 16   | 62              | "                       | 31st.—Animal has dull appearance and continues to lose flesh.  |
| February 1... | 37.2            | 37.0   | 38.3   | 36     | 48   | 8            | 24   | 63              | "                       |  |
| " 2...        | 36.7            | 36.5   | 37.5   | 44     | 48   | 8            | 28   | 64              | "                       | 2nd.—Right conjunctiva presents one large extravasation ; left, a few small petechiæ.  |
| " 3...        | 37.0            | 36.5   | 38.4   | 41     | 52   | 8            | 20   | 65              | "                       |  |
| " 4...        | 37.1            | 37.5   | 37.7   | 40     | 48   | 8            | 20   | 66              | "                       | 4th.—Extravasation of the right conjunctiva reduced in size, and left, unchanged ; administration of Arsenic stopped, and the double Iodides of Arsenic and Mercury commenced. |
| " 5...        | 37.4            | 37.5   | 38.0   | 44     | 52   | 12           | 28   | 67              | "                       |  |
| " 6...        | 37.0            | 37.2   | 37.6   | 44     | 51   | 12           | 28   | 68              | "                       | 6th.—Conjunctival petechiæ disappearing, visible mucous membranes congested.   |
| " 7...        | 37.5            | 37.5   | 37.8   | 48     | 53   | 16           | 21   | 69              | "                       | 7th.—Right conjunctiva presents two petechiæ, the left four ; appetite continues good, but the animal is very thin.  |
| " 8...        | 37.2            | 37.7   | 38.1   | 40     | 48   | 16           | 20   | 70              | "                       | 8th.—Condition of conjunctivæ unchanged.   |



| Date.         | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in the Blood. | REMARKS.  |
|---------------|-----------------|--------|--------|--------|------|--------------|------|-----------------|-------------------------|---|
|               | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                         |   |
| 1894.         |                 |        |        |        |      |              |      |                 |                         |   |
| February 9... | 37.4            | 37.3   | 37.8   | 44     | 56   | 8            | 16   | 71              | Absent.                 |   |
| " 10...       | 37.2            | 37.6   | 38.2   | 40     | 52   | 8            | 20   | 72              | "                       |   |
| " 11...       | 36.8            | 37.6   | 37.4   | 44     | 56   | 12           | 16   | 73              | "                       | 11th.—Condition of conjunctivæ unchanged.   |
| " 12...       | 37.2            | 37.7   | 38.0   | 40     | 52   | 12           | 20   | 74              | "                       | 12th.—Left conjunctival petechiæ disappeared, but a small white nodule is present. Right conjunctiva unchanged.                   |
| " 13...       | 37.1            | 38.0   | 38.3   | 44     | 52   | 10           | 20   | 75              | "                       | 13th.—Right conjunctiva clear, left presents two small nodules.   |
| " 14...       | 37.2            | 38.0   | 37.0   | 48     | 52   | 12           | 20   | 76              | "                       | 14th.—Right conjunctiva one extravasation; left, nodules are disappearing.  |
| " 15...       | 37.2            | 37.7   | 38.0   | 48     | 56   | 12           | 12   | 77              | "                       |   |
| " 16...       | 36.7            | 37.5   | 37.6   | 48     | 64   | 8            | 16   | 78              | "                       | 16th.—Both conjunctivæ clear.   |
| " 17...       | 37.5            | 37.2   | 37.8   | 52     | 60   | 12           | 20   | 79              | "                       | 17th.—Few small petechiæ in right conjunctiva, left, clear; micturition more frequent.  |
| " 18...       | 37.2            | 37.8   | 37.5   | 50     | 48   | 12           | 16   | 80              | "                       | 18th.—Do. do.   |
| " 19...       | 37.0            | 37.6   | 37.8   | 60     | 56   | 9            | 12   | 81              | "                       | 19th.—Do. do.   |
| " 20...       | 37.3            | 37.7   | 37.8   | 56     | 60   | 8            | 24   | 82              | "                       | 20th.—Do. do.   |
| " 21...       | 37.3            | 37.6   | 37.7   | 52     | 60   | 12           | 16   | 83              | "                       | 21st.—Both conjunctivæ slightly congested; general condition unchanged.   |
| " 22...       | 37.6            | 38.0   | 37.7   | 56     | 56   | 16           | 20   | 84              | "                       | 22nd.—Left conjunctiva clear, right presents one small white nodule; eye-lids apparently injected with colouring matter of blood. |
| " 23...       | 37.5            | 37.8   | 38.2   | 60     | 56   | 8            | 24   | 85              | "                       | 23rd.—Do. do.   |
| " 24...       | 37.5            | 37.8   | 37.8   | 51     | 52   | 10           | 20   | 86              | "                       | 24th.—Do. do.   |
| " 25...       | 37.3            | 37.7   | 37.7   | 56     | 54   | 10           | 12   | 87              | "                       |   |
| " 26...       | 37.2            | 37.5   | 37.7   | 50     | 50   | 12           | 14   | 88              | "                       | 26th.—Both conjunctivæ clear but yellowish, visible mucous membranes pale; animal fairly bright, and moves briskly.               |
| " 27...       | 37.2            | 37.8   | 37.8   | 44     | 59   | 8            | 17   | 89              | "                       |   |
| " 28...       | 37.4            | 37.8   | 37.7   | 46     | 50   | 11           | 17   | 90              | "                       |   |
| March 1...    | 37.4            | 37.8   | 37.7   | 52     | 53   | 12           | 18   | 91              | "                       | 1st.—Animal still losing flesh, and irritation of the hind quarters and tail continues.   |
| " 2...        | 37.3            | 37.7   | 38.1   | 51     | 54   | 11           | 22   | 92              | "                       |   |
| " 3...        | 37.4            | 38.2   | 38.2   | 49     | 55   | 10           | 16   | 93              | "                       |   |
| " 4...        | 37.6            | 37.6   | 37.5   | 51     | 53   | 11           | 17   | 94              | "                       | 4th.—Left conjunctiva slightly petechiated; right, clear but yellow.  |
| " 5...        | 37.0            | 37.7   | 38.1   | 52     | 55   | 9            | 15   | 95              | "                       | 5th.—Left conjunctiva clear, right, petechiated; animal very thin although appetite continues good.                               |
| " 6...        | 36.6            | 37.7   | 37.6   | 47     | 52   | 8            | 14   | 96              | "                       |   |
| " 7...        | 37.3            | 37.5   | 37.3   | 47     | 49   | 8            | 16   | 97              | "                       |   |
| " 8...        | 36.9            | 37.3   | 37.5   | 44     | 48   | 7            | 12   | 98              | "                       |   |
| " 9...        | 37.0            | 37.3   | 37.4   | 48     | 47   | 9            | 11   | 99              | "                       | 9th.—Both conjunctivæ clear.  |
| " 10...       | 36.7            | 37.2   | 37.5   | 44     | 52   | 8            | 12   | 100             | "                       | 10th.—Left conjunctiva slightly petechiated.  |
| " 11...       | 37.8            | 37.3   | 37.4   | 50     | 48   | 13           | 12   | 101             | "                       |   |
| " 12...       | 36.2            | 37.2   | 37.8   | 46     | 44   | 7            | 13   | 102             | "                       | 12th.—Left conjunctiva clear, right, petechiated.   |
| " 13...       | 36.7            | 37.0   | 37.3   | 41     | 45   | 9            | 14   | 103             | "                       | 13th.—Both conjunctivæ clear.   |
| " 14...       | 36.7            | 37.7   | 37.8   | 42     | 45   | 8            | 11   | 104             | "                       | 14th.—Left conjunctiva slightly petechiated; right, clear.  |
| " 15...       | 38.2            | 37.6   | 37.6   | 41     | 45   | 11           | 14   | 105             | "                       |   |
| " 16...       | 37.5            | 37.8   | 37.6   | 47     | 46   | 12           | 13   | 106             | "                       | 16th.—Both conjunctivæ slightly petechiated.  |
| " 17...       | 37.4            | 37.5   | 37.5   | 47     | 46   | 16           | 18   | 107             | "                       | 17th.—Both conjunctivæ free from petechiæ, left, congested.   |
| " 18...       | 37.1            | 37.5   | 37.5   | 43     | 46   | 11           | 17   | 108             | "                       | 18th.—Left conjunctiva slightly petechiated, right, clear; nostrils contain dry white discharge, ceased after cleaning.           |
| " 19...       | 36.7            | 37.6   | 37.7   | 41     | 49   | 12           | 16   | 109             | "                       | 19th.—Condition of conjunctivæ unchanged, slight discharge from nostrils.   |

| Date. |        | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in the Blood. | REMARKS.   |
|-------|--------|-----------------|--------|--------|--------|------|--------------|------|-----------------|-------------------------|--|
|       |        | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                         |  |
| 1894. |        |                 |        |        |        |      |              |      |                 |                         |  |
| March | 20 ... | 37.8            | 37.6   | 37.5   | 47     | 53   | 13           | 16   | 110             | Absent                  | 20th.—Irritation of skin continues although treated with carbolic solution.  |
| "     | 21 ... | 37.5            | 37.4   | 37.3   | 45     | 48   | 15           | 13   | 111             | " ...                   | 21st.—Both conjunctivæ clear.  |
| "     | 22 ... | 37.5            | 37.4   | 37.5   | 47     | 43   | 16           | 13   | 112             | " ...                   | 22nd.— Left conjunctiva one bright-red extravasation; right, clear.  |
| "     | 23 ... | 37.2            | 37.7   | 37.6   | 43     | 45   | 21           | 19   | 113             | " ...                   | 23rd.—Right conjunctiva slightly petechiated, left presents two extravasations.  |
| "     | 24 ... | 36.7            | 37.7   | 38.0   | 39     | 50   | 11           | 15   | 114             | " ...                   | 24th.— Right conjunctiva one extravasation ; left, clear.  |
| "     | 25 ... | 37.5            | 37.8   | 38.0   | 44     | 47   | 10           | 18   | 115             | " ...                   |  |
| "     | 26 ... | 37.2            | 37.8   | 37.8   | 46     | 53   | 15           | 19   | 116             | " ...                   | 26th.—Condition of right conjunctiva unchanged ; left, slightly petechiated.   |
| "     | 27 ... | 37.2            | 37.7   | 37.8   | 48     | 53   | 13           | 17   | 117             | " ...                   | 27th.—Right conjunctiva presents four petechiæ ; left, one.  |
| "     | 28 ... | 37.3            | 38.1   | 37.8   | 47     | 48   | 10           | 18   | 118             | " ...                   | 28th.—Petechiæ disappearing.   |
| "     | 29 ... | 37.4            | 37.6   | 37.7   | 38     | 44   | 11           | 16   | 119             | " ...                   | 29th.—Right conjunctiva clear, left presents one extravasation.  |
| "     | 30 ... | 37.4            | 37.6   | 37.8   | 43     | 47   | 11           | 13   | 120             | " ...                   | 30th.— Do. do.   |
| "     | 31 ... | 37.6            | 37.7   | 37.4   | 43     | 45   | 10           | 14   | 121             | " ...                   | 31st.—Right conjunctiva presents one extravasation ; left, clear.  |
| April | 1 ...  | 37.4            | 37.4   | 37.5   | 42     | 48   | 12           | 15   | 122             | " ...                   | 1st.— Do. do.  |
| "     | 2 ...  | 36.6            | 36.5   | 37.7   | 40     | 45   | 11           | 15   | 123             | " ...                   | 2nd.— Do. do.  |
| "     | 3 ...  | 36.7            | 37.3   | 37.3   | 38     | 45   | 8            | 16   | 124             | " ...                   | 3rd.—Conjunctival membranes yellow, left presents one extravasation ; slight discharge from the nose.                                      |
| "     | 4 ...  | 37.4            | 37.8   | 38.0   | 39     | 46   | 14           | 22   | 125             | " ...                   | 4th.—Conjunctivæ yellowish, right slightly petechiated ; left, clear.  |
| "     | 5 ...  | 37.3            | 38.0   | 37.8   | 44     | 46   | 14           | 19   | 126             | " ...                   | 5th.—Conjunctivæ yellowish, left slightly petechiated ; right, clear.  |
| "     | 6 ...  | 38.0            | 37.8   | 37.8   | 45     | 46   | 16           | 26   | 127             | " ...                   | 6th.— Conjunctivæ yellowish, right slightly petechiated ; left, clear.   |
| "     | 7 ...  | 38.0            | 37.7   | 38.0   | 43     | 48   | 10           | 22   | 128             | " ...                   | 7th.—Both conjunctivæ congested, no petechiæ ; slight yellow secretion from right eye, discharge from nose, visible mucous membranes pale. |
| "     | 8 ...  | 37.6            | 37.5   | 38.2   | 45     | 49   | 13           | 22   | 129             | " ...                   | 8th.— Right conjunctiva slightly congested, discharge from nose continues.   |
| "     | 9 ...  | 37.3            | 38.0   | 38.1   | 42     | 48   | 8            | 20   | 130             | " ...                   | 9th.—Traces of petechiæ in right conjunctiva ; left, clear.  |
| "     | 10 ... | 37.5            | 37.8   | 38.1   | 44     | 49   | 8            | 18   | 131             | " ...                   | 10th.—Conjunctivæ clear.   |
| "     | 11 ... | 37.6            | 38.0   | 37.8   | 46     | 46   | 13           | 17   | 132             | " ...                   | 11th.— Do. Animal bright.  |
| "     | 12 ... | 37.6            | 37.8   | 38.2   | 39     | 48   | 15           | 16   | 133             | " ...                   | 12th.— Do. Two minute spots in right conjunctiva, small swellings on neck with dry heads.  |
| "     | 13 ... | 37.6            | 37.8   | 37.5   | 45     | 51   | 16           | 17   | 134             | " ...                   | 13th.—One small spot in left conjunctiva, right, clear.  |
| "     | 14 ... | 37.6            | 37.7   | 37.7   | 47     | 47   | 14           | 14   | 135             | " ...                   | 14th.— Do. do. do.   |
| "     | 15 ... | 37.4            | 37.5   | 37.6   | 42     | 44   | 14           | 15   | 136             | " ...                   | 15th.— Do. do. do.   |
| "     | 16 ... | 37.2            | 37.5   | 38.0   | 42     | 43   | 15           | 19   | 137             | " ...                   | 16th.—Both conjunctivæ clear ; discharge from nose ceased.   |
| "     | 17 ... | 37.4            | 38.0   | 37.6   | 40     | 44   | 15           | 20   | 138             | " ...                   | 17th.— Do.   |
| "     | 18 ... | 37.5            | 38.0   | 37.7   | 42     | 47   | 10           | 22   | 139             | " ...                   | 18th.— Do.   |
| "     | 19 ... | 37.6            | 37.5   | 37.7   | 42     | 46   | 12           | 20   | 140             | " ...                   | 19th.— Do. do. Animal continues bright ; disappearance of swellings.   |
| "     | 20 ... | 37.7            | 37.7   | 37.7   | 45     | 47   | 14           | 17   | 141             | " ...                   | 20th.—Both conjunctivæ clear.  |
| "     | 21 ... | 37.5            | 37.7   | 38.0   | 44     | 41   | 18           | 18   | 142             | " ...                   | 21st.— Do. do.   |
| "     | 22 ... | 37.8            | 37.7   | 37.5   | 40     | 43   | 14           | 16   | 143             | " ...                   | 22nd.— Do. do.   |
| "     | 23 ... | 37.7            | 37.8   | 37.7   | 41     | 41   | 17           | 18   | 144             | " ...                   | 23rd.— Do. do.   |
| "     | 24 ... | 37.7            | 37.8   | 37.6   | 42     | 41   | 18           | 20   | 145             | " ...                   | 24th.—Right conjunctiva clear ; left, slight trace of petechiæ.  |
| "     | 25 ... | 37.5            | 38.0   | 37.9   | 42     | 41   | 15           | 18   | 146             | " ...                   | 25th.— Do. do.   |
| "     | 26 ... | 37.5            | 37.7   | 38.1   | 42     | 43   | 15           | 16   | 147             | " ...                   | 26th.—Both conjunctivæ clear.  |
| "     | 27 ... | 37.7            | 37.5   | 37.8   | 39     | 40   | 15           | 23   | 148             | " ...                   | 27th.— Do. do.   |
| "     | 28 ... | 37.6            | 37.9   | 38.1   | 42     | 46   | 15           | 22   | 149             | " ...                   | 28th.— Do. do.   |
| "     | 29 ... | 37.2            | 37.8   | 37.5   | 45     | 40   | 11           | 16   | 150             | " ...                   | 29th.— Do. do.   |



| Date. |        | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in the Blood. | REMARKS.  |
|-------|--------|-----------------|--------|--------|--------|------|--------------|------|-----------------|-------------------------|---|
|       |        | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                         |   |
| 1894. |        |                 |        |        |        |      |              |      |                 |                         |   |
| April | 30 ... | 37.3            | 38.0   | 37.6   | 40     | 42   | 8            | 21   | 151             | Absent                  | 30th.—Both conjunctivæ clear.   |
| May   | 1 ...  | 37.7            | 37.7   | 37.8   | 41     | 42   | 9            | 15   | 152             | " ...                   | 1st.— Do. do.   |
| "     | 2 ...  | 37.3            | 37.9   | 37.8   | 38     | 37   | 16           | 17   | 153             | " ...                   | 2nd.—Left conjunctiva, one large extravasation and slight congestion.   |
| "     | 3 ...  | 37.5            | 38.2   | 37.7   | 39     | 36   | 14           | 18   | 154             | " ...                   | 3rd.— Do. right clear.  |
| "     | 4 ...  | 37.7            | 37.8   | 38.0   | 42     | 41   | 13           | 17   | 155             | " ...                   | 4th.—Both conjunctivæ clear.  |
| "     | 5 ...  | 37.5            | 37.7   | 37.6   | 41     | 48   | 14           | 24   | 156             | " ...                   | 5th.— Do. do.   |
| "     | 6 ...  | 37.5            | 38.1   | 37.6   | 41     | 42   | 15           | 18   | 157             | " ...                   | 6th.— Do. Irritation of neck and tail recommenced.  |
| "     | 7 ...  | 37.5            | 37.6   | 37.7   | 41     | 41   | 10           | 17   | 158             | " ...                   | 7th.— Do. do.   |
| "     | 8 ...  | 37.4            | 37.8   | 37.7   | 39     | 40   | 8            | 19   | 159             | " ...                   | 8th.— Do. do.   |
| "     | 9 ...  | 37.6            | 37.7   | 37.7   | 40     | 39   | 10           | 12   | 160             | " ...                   | 9th.— Do. do.   |
| "     | 10 ... | 37.0            | 37.8   | 37.7   | 34     | 43   | 8            | 14   | 161             | " ...                   | 10th.—Left conjunctiva, traces of petechiæ, right conjunctiva, two large petechiæ.  |
| "     | 11 ... | 37.6            | 37.7   | 37.8   | 42     | 45   | 14           | 19   | 162             | " ...                   | 11th.—Left conjunctiva clear, right conjunctiva, cluster of small dots and two large petechiæ; small hard swellings on shoulder; venous regurgitations. |
| "     | 12 ..  | 37.6            | 37.8   | 37.8   | 42     | 38   | 14           | 17   | 163             | "                       | 12th.— Conjunctivæ clear.   |
| "     | 13 ... | 37.4            | 37.7   | 37.4   | 41     | 43   | 13           | 20   | 164             | "                       |   |
| "     | 14 ... | 37.6            | 37.7   | 37.7   | 37     | 38   | 10           | 13   | 165             | "                       |   |
| "     | 15 ... | 37.4            | 37.5   | 38.2   | 38     | 37   | 12           | 16   | 166             | "                       |   |
| "     | 16 ... | 37.3            | 37.7   | 38.2   | 42     | 40   | 12           | 11   | 167             | "                       |   |
| "     | 17 ... | 37.7            | 37.7   | 37.7   | 41     | 40   | 11           | 14   | 168             | "                       |   |
| "     | 18 ... | 37.7            | 37.7   | 37.8   | 38     | 37   | 10           | 7    | 169             | "                       |   |
| "     | 19 ... | 37.6            | 37.7   | 37.6   | 39     | 36   | 12           | 14   | 170             | "                       |   |
| "     | 20 ... | 38.0            | 38.3   | 37.7   | 38     | 42   | 9            | 20   | 171             | "                       |   |
| "     | 21 ... | 38.1            | 39.0   | 38.8   | 44     | 51   | 10           | 20   | 172             | "                       |   |
| "     | 22 ... | 38.3            | 40.0   | 39.1   | 46     | 52   | 13           | 30   | 173             | "                       |   |
| "     | 23 ... | 38.2            | 38.5   | 38.6   | 51     | 46   | 12           | 17   | 174             | "                       |   |
| "     | 24 ... | 38.2            | 38.3   | 38.6   | 48     | 51   | 15           | 19   | 175             | "                       |   |
| "     | 25 ... | 38.1            | 38.2   | 38.3   | 47     | 44   | 22           | 18   | 176             | "                       |   |
| "     | 26 ... | 37.5            | 38.0   | 38.0   | 39     | 43   | 11           | 14   | 177             | " ...                   | 26th.—Conjunctivæ clear, several small swellings on the left of neck. Corn increased to 10 lbs. daily.  |
| "     | 27 ... | 37.6            | 38.0   | 38.1   | 41     | 42   | 11           | 14   | 178             | " ...                   | 27th.—Conjunctivæ pale, left, traces of petechiæ; swellings still present.  |
| "     | 28 ... | 37.4            | 37.6   | 37.7   | 41     | 39   | 15           | 12   | 179             | " ...                   |   |
| "     | 29 ... | 37.6            | 37.5   | 37.7   | 40     | 36   | 12           | 14   | 180             | " ...                   | 29th.—Conjunctivæ pale, left, traces of petechiæ; swellings on neck continue.   |
| "     | 30 ... | 37.7            | 37.7   | 37.7   | 38     | 39   | 19           | 15   | 181             | " ...                   | 30th.—Right conjunctiva clear, left, one spot; swellings on neck continue; slight discharge from nose.  |
| "     | 31 ... | 37.7            | 37.8   | 37.7   | 42     | 37   | 14           | 14   | 182             | " ...                   | 31st.—Conjunctivæ clear; regurgitations in jugular vein.  |
| June  | 1 ...  | 37.7            | 37.5   | 37.8   | 40     | 40   | 18           | 15   | 183             | " ...                   | 1st.—Right conjunctiva traces of petechiæ, left, clear.   |
| "     | 2 ...  | 37.6            | 37.5   | 37.9   | 36     | 37   | 13           | 14   | 184             | " ...                   | 2nd.— Conjunctivæ clear.  |
| "     | 3 ...  | 37.7            | 37.7   | 37.7   | 38     | 37   | 12           | 13   | 185             | " ...                   | 3rd.—Right conjunctiva traces of petechiæ; left, one spot.  |
| "     | 4 ...  | 37.7            | 37.6   | 37.9   | 38     | 38   | 12           | 15   | 186             | " ...                   | 4th.—Eyes normal, right, minute speck on inner canthus.   |
| "     | 5 ...  | 37.8            | 38.1   | 38.6   | 35     | 41   | 18           | 18   | 187             | " ...                   | 5th.— Do. do.   |
| "     | 6 ...  | 38.1            | 37.8   | 38.2   | 42     | 46   | 26           | 13   | 188             | " ..                    | 6th.—Right conjunctiva clear, left, one spot.   |
| "     | 7 ...  | 38.2            | 38.0   | 37.8   | 42     | 41   | 18           | 13   | 189             | " ...                   | 7th.— Do. one yellow spot.  |
| "     | 8 ...  | 38.1            | 38.0   | 37.7   | 45     | 37   | 23           | 14   | 190             | " ...                   | 8th.— Do. do. and one extravasation.  |
| "     | 9 ...  | 37.7            | 37.8   | 37.7   | 42     | 37   | 18           | 10   | 191             | " ...                   | 9th.— Do. three petechiæ, left, one.  |
| "     | 10 ... | 37.8            | 37.8   | 37.8   | 43     | 43   | 23           | 15   | 192             | " ...                   | 10th.— Do. clear, left, one spot; jelly-like exudation on right side; swelling on left side of sheath; due to bite of insect.                           |
| "     | 11 ... | 37.6            | 38.0   | 37.8   | 38     | 43   | 12           | 10   | 193             | " ...                   | 11th.—Right conjunctiva, one spot; left, clear; jelly-like exudation on right side of sheath; swelling of sheath increased.                             |



| Date.  |        | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in the Blood. | REMARKS.  |
|--------|--------|-----------------|--------|--------|--------|------|--------------|------|-----------------|-------------------------|---|
|        |        | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                         |   |
| 1894.  |        |                 |        |        |        |      |              |      |                 |                         |   |
| June   | 12 ... | 38.0            | 37.7   | 37.7   | 39     | 41   | 10           | 14   | 194             | Absent                  | 12th.—Right conjunctiva one spot; left, clear; swelling on right side; stifle reduced, swelling of sheath gone. |
| "      | 13 ... | 37.9            | 38.0   | 38.0   | 40     | 44   | 12           | 13   | 195             | " ...                   | 13th.—Eyes normal, stifle slightly thickened.   |
| "      | 14 ... | 37.8            | 38.0   | 37.8   | 44     | 44   | 10           | 8    | 196             | " ...                   | 14th.—Eyes normal, swelling almost disappeared.   |
| "      | 15 ... | 37.8            | 37.8   | 37.8   | 41     | 43   | 14           | 11   | 197             | " ...                   | 15th.— Do. do.  |
| "      | 16 ... | 37.8            | 37.7   | 37.7   | 37     | 45   | 16           | 11   | 198             | " ...                   | 16th.— Do.  |
| "      | 17 ... | 38.0            | 38.0   | 38.1   | 42     | 42   | 16           | 12   | 199             | " ...                   | 17th.— Do.  |
| "      | 18 ... | 38.0            | 38.2   | 38.1   | 46     | 44   | 14           | 10   | 200             | " ...                   | 18th.—Animal dull, right conjunctiva, one red spot and two caseous lumps; left, clear.                          |
| "      | 19 ... | 37.8            | 37.8   | 38.2   | 44     | 42   | 14           | 20   | 201             | " ...                   | 19th.—Right conjunctiva two caseous bodies; left, clear; slight discharge from nostril.                         |
| "      | 20 ... | 38.0            | 37.7   | 37.6   | 45     | 50   | 11           | 14   | 202             | " ...                   | 20th.— Conjunctivæ clear.   |
| "      | 21 ... | 38.0            | 37.7   | 38.0   | 43     | 44   | 12           | 11   | 203             | " ..                    | 21st.— Do.  |
| "      | 22 ... | 38.0            | 37.3   | 37.8   | 47     | 44   | 19           | 8    | 204             | " ...                   | 22nd.—Both conjunctivæ present traces of petechiæ.  |
| "      | 23 ... | 38.1            | 37.8   | 38.0   | 44     | 45   | 12           | 9    | 205             | " ...                   | 23rd.— Do. do.  |
| "      | 24 ... | 38.2            | 38.0   | 37.8   | 46     | 44   | 12           | 9    | 206             | " ..                    | 24th.— Do. do.  |
| "      | 25 ... | 38.2            | 37.7   | 38.1   | 46     | 42   | 14           | 12   | 207             | " ...                   | 25th.—Conjunctivæ clear.  |
| "      | 26 ... | 37.8            | 37.2   | 38.0   | 40     | 43   | 14           | 11   | 208             | " ...                   | 26th.— Do. congested.   |
| "      | 27 ... | 37.7            | 37.7   | 38.1   | 42     | 43   | 14           | 12   | 209             | " ...                   | 27th.—Right conjunctiva clear, left congested.  |
| "      | 28 ... | 37.7            | 37.8   | 38.1   | 48     | 47   | 16           | 12   | 210             | " ...                   | 28th.—Right conjunctiva one spot left, congested.   |
| "      | 29 ... | 37.8            | 37.8   | 38.2   | 46     | 50   | 12           | 11   | 211             | " ...                   | 29th.—Conjunctivæ clear.  |
| "      | 30 ... | 37.7            | 37.6   | 37.8   | 44     | 40   | 12           | 9    | 212             | " ..                    | 30th.— Do.  |
| July   | 1 ...  | 37.8            | 37.2   | 38.0   | 45     | 42   | 15           | 25   | 213             | " ...                   | 1st.— Do.   |
| "      | 2 ...  | 38.1            | 38.0   | 38.0   | 41     | 39   | 10           | 12   | 214             | " ...                   | 2nd.— Do.   |
| "      | 3 ...  | 38.2            | 38.0   | 38.1   | 40     | 48   | 13           | 12   | 215             | " ...                   | 3rd.— Do.   |
| "      | 4 ...  | 38.0            | 37.7   | 37.8   | 45     | 46   | 13           | 11   | 216             | " ..                    | 4th.— Do.   |
| "      | 5 ...  | 38.1            | 37.8   | 37.8   | 47     | 40   | 16           | 10   | 217             | " ...                   | 5th.— Do.   |
| "      | 6 ...  | 38.0            | 38.1   | 37.8   | 46     | 45   | 20           | 16   | 218             | " ...                   | 6th.— Do.   |
| "      | 7 ...  | 38.0            | 38.0   | 38.0   | 44     | 43   | 12           | 13   | 219             | " ...                   | 7th.— Do.   |
| "      | 8 ...  | 37.8            | 37.7   | 38.0   | 46     | 44   | 13           | 12   | 220             | " ...                   | 8th.— Do.   |
| "      | 9 ...  | 38.0            | 37.8   | 38.0   | 43     | 44   | 11           | 10   | 221             | " ...                   | 9th.— Do.   |
| "      | 10 ... | 37.7            | 38.4   | 37.8   | 43     | 46   | 12           | 12   | 222             | " ...                   | 10th.— Do.  |
| "      | 11 ... | 38.3            | 37.8   | 37.7   | 45     | 44   | 15           | 11   | 223             | " ...                   | 11th.— Do.  |
| "      | 12 ... | 38.1            | 37.6   | 37.8   | 42     | 48   | 14           | 14   | 224             | " ...                   | 12th.— Do.  |
| "      | 13 ... | 37.7            | 38.1   | 38.0   | 38     | 46   | 9            | 12   | 225             | " ...                   | 13th.— Do.  |
| "      | 14 ... | 37.7            | 38.2   | 38.1   | 40     | 46   | 15           | 13   | 226             | "                       |   |
| "      | 15 ... | 38.0            | 38.0   | 37.7   | 46     | 45   | 16           | 9    | 227             | "                       |   |
| "      | 16 ... | 38.1            | 38.0   | 38.1   | 42     | 46   | 13           | 10   | 228             | "                       |   |
| "      | 17 ... | 38.2            | 38.2   | 38.0   | 44     | 44   | 17           | 11   | 229             | "                       |   |
| "      | 18 ... | 38.2            | 37.8   | 38.1   | 49     | 43   | 24           | 18   | 230             | "                       |   |
| "      | 19 ... | 38.1            | 38.1   | 37.8   | 41     | 38   | 12           | 12   | 231             | " ...                   | 19th.—Conjunctivæ clear; left, one caseous body.  |
| "      | 20 ... | 38.1            | 38.2   | 38.0   | 38     | 40   | 11           | 14   | 232             | " ...                   | 20th.— Do. do.  |
| "      | 21 ... | 37.8            | 38.1   | 38.1   | 44     | 43   | 10           | 11   | 233             | " ...                   | 21st.— Do. do.  |
| "      | 22 ... | 37.8            | 37.8   | 38.0   | 48     | 50   | 12           | 15   | 234             | "                       |   |
| "      | 23 ... | 38.0            | 38.2   | 38.0   | 43     | 47   | 11           | 13   | 235             | " ..                    | 23rd.— Do. do.  |
| "      | 24 ... | 38.1            | 38.2   | 38.1   | 42     | 44   | 14           | 13   | 236             | " ...                   | 24th.— Do. do.  |
| "      | 25 ... | 38.3            | 38.2   | 37.8   | 44     | 52   | 23           | 15   | 237             | " ...                   | 25th.— Do.  |
| "      | 26 ... | 38.2            | 38.0   | 38.2   | 40     | 46   | 10           | 36   | 238             | " ...                   | 26th.—Right conjunctiva clear; left one spot.   |
| "      | 27 ... | 37.8            | 38.0   | 38.2   | 46     | 49   | 20           | 22   | 239             | " ...                   | 27th.— Do. do.  |
| "      | 28 ... | 37.8            | 38.1   | 38.4   | 52     | 58   | 13           | 32   | 240             | " ...                   | 28th.—Conjunctivæ clear.  |
| "      | 29 ... | 38.2            | 38.2   | 38.4   | 48     | 51   | 25           | 31   | 241             | " ...                   | 29th.— Do.  |
| "      | 30 ... | 38.2            | 38.2   | 38.5   | 49     | 49   | 17           | 40   | 242             | " ...                   | 30th.— Do.  |
| "      | 31 ... | 37.8            | 38.3   | 38.5   | 53     | 55   | 27           | 33   | 243             | " ...                   | 31st.— Do.  |
| August | 1 ...  | 37.8            | 38.3   | 38.1   | 44     | 58   | 22           | 24   | 244             | " ...                   | 1st.— Do. a second caseous lump appearing in the left,  |
| "      | 2 ...  | 38.3            | 38.3   | 38.4   | 54     | 55   | 18           | 38   | 245             | " ...                   | 2nd.— Do.   |
| "      | 3 ...  | 38.2            | 37.7   | 38.2   | 53     | 55   | 30           | 28   | 246             | " ...                   | 3rd.— Do.   |
| "      | 4 ...  | 37.8            | 38.2   | 38.3   | 48     | 52   | 20           | 33   | 247             | " ...                   | 4th.— Do.   |
| "      | 5 ...  | 38.1            | 38.5   | 38.5   | 45     | 56   | 25           | 11   | 248             | " ...                   | 5th.— Do.   |

| Date.           | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in Blood. | REMARKS.  |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|-----------------|---------------------|---|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                     |   |
| 1894.           |                 |        |        |        |      |              |      |                 |                     |   |
| August 6 ...    | 38.5            | 39.2   | 38.3   | 49     | 54   | 17           | 24   | 249             | Absent              | 6th.—Conjunctivæ clear, slight swelling below the knee of right fore limb. Corn allowance lowered.                  |
| " 7 ...         | 37.7            | 38.3   | 38.2   | 48     | 51   | 17           | 24   | 250             | " ...               | 7th.—Right conjunctiva clear; left, one spot, swelling extending downwards.   |
| " 8 ...         | 38.1            | 38.0   | 38.2   | 44     | 43   | 16           | 19   | 251             | " ...               | 8th.—Right conjunctiva clear; left, slightly yellow, swelling less.   |
| " 9 ...         | 38.1            | 38.0   | 38.1   | 44     | 53   | 27           | 15   | 252             | " ...               | 9th.—Do. do.  |
| " 10 ...        | 38.0            | 38.3   | 38.4   | 46     | 45   | 17           | 36   | 253             | " ...               | 10th.—Right conjunctiva yellowish; left, clear, one spot. Swelling increased. Corn further lowered, and bran given. |
| " 11 ...        | 38.3            | 38.4   | 38.2   | 50     | 49   | 23           | 20   | 254             | "                   | 11th.—Right conjunctiva clearer; left, clear.   |
| " 12 ...        | 38.1            | 38.2   | 38.3   | 47     | 48   | 17           | 17   | 255             | " ...               | 12th.—Right conjunctiva clearer; left, clear, swelling increased.   |
| " 13 ...        | 38.0            | 38.0   | 38.2   | 46     | 53   | 29           | 17   | 256             | " ...               | 13th.—Conjunctivæ clear, swelling diminished.   |
| " 14 ...        | 38.0            | 38.1   | 38.2   | 47     | 53   | 22           | 26   | 257             | " ...               | 14th.—Do. do.   |
| " 15 ...        | 39.5            | 39.7   | 39.6   | 54     | 55   | 20           | 28   | 258             | " ...               | 15th.—Do. do.   |
| " 16 ...        | 39.0            | 39.2   | 39.1   | 48     | 50   | 15           | 25   | 259             | " ..                | 16th.—Do. do.   |
| " 17 ...        | 38.5            | 39.1   | 38.7   | 52     | 52   | 16           | 20   | 260             | " ...               | 17th.—Do. do.   |
| " 18 ...        | 38.3            | 39.1   | 39.1   | 48     | 49   | 16           | 20   | 261             | " ...               | 18th.—Conjunctivæ yellowish; left, one spot.  |
| " 19 ...        | 40.2            | 40.4   | 40.2   | 59     | 76   | 15           | 19   | 262             | " ...               | 19th.—Conjunctivæ yellow, one spot in each.   |
| " 20 ...        | 39.5            | 40.3   | 40.0   | 74     | 80   | 16           | 24   | 263             | " ...               | 20th.—Do. right, one spot, fading; swelling of knee hard.   |
| " 21 ...        | 38.6            | 39.1   | 39.0   | 67     | 69   | 20           | 28   | 264             | " ...               | 21st.—Do.   |
| " 22 ...        | 38.5            | 38.5   | 39.0   | 62     | 61   | 23           | 26   | 265             | " ...               | 22nd.—Right conjunctiva clear, one large extravasation on the membrana nictitans.                                   |
| " 23 ...        | 38.4            | 38.4   | 38.4   | 55     | 55   | 27           | 33   | 266             | " ...               | 23rd.—Animal brighter, conjunctivæ clear, swelling less.  |
| " 24 ...        | 38.2            | 39.1   | 38.5   | 54     | 45   | 26           | 28   | 267             | " ...               | 24th.—Conjunctivæ clear, faintly yellow.  |
| " 25 ...        | 38.5            | 39.0   | 38.5   | 54     | 57   | 26           | 24   | 268             | " ...               | 25th.—Do. do.   |
| " 26 ...        | 38.4            | 38.5   | 38.5   | 54     | 56   | 22           | 28   | 269             | " ...               | 26th.—Do. do.   |
| " 27 ...        | 38.7            | 38.7   | 38.1   | 52     | 52   | 23           | 32   | 270             | " ...               | 27th.—Right conjunctiva one spot; left, three petechiæ.   |
| " 28 ...        | 38.5            | 38.4   | 38.3   | 54     | 53   | 26           | 23   | 271             | " ...               | 28th.—Conjunctivæ clear.  |
| " 29 ...        | 38.0            | 38.5   | 38.3   | 53     | 57   | 21           | 22   | 272             | " ...               | 29th.—Right conjunctiva small petechiæ; left, clear.  |
| " 30 ...        | 38.3            | 38.0   | 38.2   | 45     | 51   | 23           | 21   | 273             | " ...               | 30th.—Conjunctivæ yellowish.  |
| " 31 ...        | 38.2            | 38.3   | 38.1   | 53     | 49   | 33           | 24   | 274             | " ...               | 31st.—Conjunctivæ clear.  |
| September 1 ... | 38.3            | 38.0   | 38.3   | 56     | 50   | 36           | 20   | 275             | " ...               | 1st.—Do.  |
| " 2 ...         | 38.3            | 38.4   | 38.1   | 45     | 52   | 21           | 24   | 276             | " ...               | 2nd.—Do.  |
| " 3 ..          | 38.5            | 38.1   | 38.0   | 53     | 52   | 19           | 16   | 277             | " ...               | 3rd.—Do. Slight discharge from nostrils.  |
| " 4 ...         | 38.3            | 38.4   | 38.3   | 50     | 49   | 25           | 21   | 278             | " ...               | 4th.—Do.  |
| " 5 ...         | 38.4            | 38.2   | 38.4   | 51     | 51   | 22           | 21   | 279             | " ..                | 5th.—Do.  |
| " 6 ...         | 38.3            | 38.3   | 38.2   | 49     | 53   | 21           | 22   | 280             | " ..                | 6th.—Do. but yellow.  |
| " 7 ...         | 38.2            | 38.0   | 38.2   | 46     | 52   | 24           | 14   | 281             | " ...               | 7th.—Right conjunctiva one spot; left, clear.   |
| " 8 ...         | 38.3            | 38.0   | 38.0   | 52     | 52   | 20           | 29   | 282             | " ...               | 8th.—Conjunctivæ clear.   |
| " 9 ...         | 38.1            | 38.3   | 38.2   | 44     | 44   | 24           | 28   | 283             | " ...               | 9th.—Do.  |
| " 10 ...        | 38.3            | 38.1   | 38.2   | 49     | 47   | 25           | 23   | 284             | " ...               | 10th.—Do.   |
| " 11 ...        | 38.4            | 38.1   | 38.1   | 47     | 44   | 18           | 20   | 285             | " ...               | 11th.—Right conjunctiva four petechiæ; left, clear.   |
| " 12 ...        | 38.2            | 38.1   | 38.0   | 49     | 68   | 23           | 24   | 286             | " ...               | 12th.—Do. yellowish, one spot, left, clear.   |
| " 13 ...        | 38.1            | 38.0   | 38.2   | 48     | 42   | 32           | 32   | 287             | " ...               | 13th.—Conjunctivæ faintly yellow, one spot in each.   |
| " 14 ...        | 38.3            | 37.7   | 38.0   | 47     | 44   | 24           | 32   | 288             | " ...               | 14th.—Do. one spot in right.  |
| " 15 ...        | 38.3            | 37.8   | 37.8   | 47     | 46   | 27           | 16   | 289             | " ...               | 15th.—Right conjunctiva two extravasations; left, clear.  |
| " 16 ...        | 38.0            | 37.8   | 38.0   | 52     | 42   | 16           | 12   | 290             | " ...               | 16th.—Conjunctivæ slightly congested.   |



| Date.          | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in Blood. | REMARKS.  |
|----------------|-----------------|--------|--------|--------|------|--------------|------|-----------------|---------------------|---|
|                | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                     |   |
| 1894.          |                 |        |        |        |      |              |      |                 |                     |   |
| Sept. 17 ...   | 38.4            | 37.8   | 38.1   | 50     | 50   | 20           | 24   | 291             | Absent              | 17th.—Right conjunctiva several small petechiæ; left, clear.      |
| " 18 ...       | 38.1            | 38.0   | 38.0   | 40     | 40   | 20           | 21   | 292             | " ...               | 18th.—Conjunctivæ clear.  |
| " 19 ...       | 38.4            | 38.1   | 38.0   | 48     | 52   | 30           | 24   | 293             | " ...               | 19th.—Do.   |
| " 20 ...       | 38.0            | 38.1   | 38.3   | 46     | 49   | 20           | 20   | 294             | " ...               | 20th.—Do.   |
| " 21 ...       | 38.0            | 38.1   | 38.1   | 42     | 50   | 20           | 24   | 295             | " ...               | 21st.—Do.   |
| " 22 ...       | 38.1            | 38.1   | 38.2   | 48     | 48   | 26           | 22   | 296             | " ...               | 22nd.—Do. Slight swelling of right knee.                          |
| " 23 ...       | 38.0            | 37.8   | 37.8   | 46     | 42   | 22           | 14   | 297             | " ...               | 23rd.—Do. Swelling unchanged.                                     |
| " 24 ...       | 38.1            | 37.8   | 38.1   | 40     | 50   | 18           | 24   | 298             | " ...               | 24th.—Do.   |
| " 25 ...       | 38.2            | 37.8   | 38.0   | 52     | 46   | 26           | 24   | 299             | " ...               | 25th.—Do. Left one spot.  |
| " 26 ...       | 38.0            | 38.0   | 38.1   | 48     | 48   | 22           | 34   | 300             | " ...               | 26th.—Do.   |
| " 27 ...       | 38.4            | 37.8   | 38.1   | 46     | 48   | 32           | 20   | 301             | " ...               | 27th.—Do.   |
| " 28 ...       | 38.1            | 38.0   | 37.8   | 44     | 46   | 26           | 32   | 302             | " ...               | 28th.—Do.   |
| " 29 ...       | 38.1            | 37.7   | 38.2   | 40     | 48   | 24           | 28   | 303             | " ...               | 29th.—Conjunctivæ clear.  |
| " 30 ...       | 38.4            | 38.0   | 38.1   | 46     | 44   | 40           | 18   | 304             | " ...               | 30th.—Do. left, one spot.   |
| October 1 ...  | 38.1            | 38.1   | 38.0   | 44     | 48   | 20           | 24   | 305             | " ...               | 1st.—Do.  |
| " 2 ...        | 38.3            | 38.0   | 37.8   | 48     | 44   | 26           | 18   | 306             | " ...               | 2nd.—Do.  |
| " 3 ...        | 38.3            | 38.0   | 37.8   | 50     | 38   | 30           | 14   | 307             | " ...               | 3rd.—Do.  |
| " 4 ...        | 38.4            | 37.8   | 38.1   | 48     | 44   | 26           | 20   | 308             | " ...               | 4th.—Do.  |
| " 5 ...        | 38.1            | 37.7   | 37.8   | 44     | 34   | 24           | 18   | 309             | " ...               | 5th.—Right conjunctiva few small petechiæ; left clear.            |
| " 6 ...        | 38.0            | 38.0   | 38.3   | 44     | 52   | 20           | 22   | 310             | " ...               | 6th.—Do. do.  |
| " 7 ...        | 38.2            | 38.0   | 38.1   | 44     | 44   | 36           | 28   | 311             | " ...               | 7th.—Do. traces of petechiæ, left, clear.                         |
| " 8 ...        | 38.1            | 38.1   | 38.3   | 40     | 40   | 24           | 16   | 312             | " ...               | 8th.—Do. do.  |
| " 9 ...        | 38.1            | 38.1   | 38.2   | 42     | 48   | 30           | 24   | 313             | " ...               | 9th.—Conjunctivæ clear.   |
| " 10 ...       | 38.0            | 37.8   | 38.1   | 40     | 48   | 24           | 28   | 314             | " ...               | 10th.—Do.   |
| " 11 ...       | 38.0            | 38.0   | 38.1   | 44     | 48   | 28           | 28   | 315             | " ...               | 11th.—Do.   |
| " 12 ...       | 38.2            | 38.3   | 38.2   | 46     | 52   | 28           | 28   | 316             | " ...               | 12th.—Do.   |
| " 13 ...       | 38.1            | 38.3   | 38.2   | 40     | 48   | 20           | 36   | 317             | " ...               | 13th.—Do.   |
| " 14 ...       | 38.3            | 38.1   | 38.3   | 44     | 48   | 28           | 24   | 318             | " ...               | 14th.—Do.   |
| " 15 ...       | 38.3            | 38.3   | 38.1   | 56     | 52   | 40           | 28   | 319             | " ...               | 15th.—Do.   |
| " 16 ...       | 38.1            | 38.2   | 38.1   | 40     | 52   | 24           | 32   | 320             | " ...               | 16th.—Do.   |
| " 17 ...       | 38.2            | 38.2   | 38.2   | 48     | 52   | 28           | 24   | 321             | " ...               | 17th.—Right conjunctiva one small spot; left, clear.              |
| " 18 ...       | 38.2            | 38.3   | 38.2   | 52     | 52   | 24           | 32   | 322             | " ...               | 18th.—Conjunctivæ clear.  |
| " 19 ...       | 38.0            | 38.2   | 38.0   | 52     | 52   | 24           | 24   | 323             | " ...               | 19th.—Do.   |
| " 20 ...       | 37.8            | 38.1   | 38.1   | 44     | 52   | 28           | 36   | 324             | " ...               | 20th.—Do.   |
| " 21 ...       | 37.8            | 38.1   | 38.1   | 48     | 44   | 24           | 28   | 325             | " ...               | 21st.—Do.   |
| " 22 ...       | 37.8            | 38.1   | 38.0   | 52     | 48   | 28           | 20   | 326             | " ...               | 22nd.—Do. left, one spot.   |
| " 23 ...       | 38.3            | 37.7   | 38.1   | 44     | 44   | 24           | 24   | 327             | " ...               | 23rd.—Right conjunctiva petechiated; left, two spots.             |
| " 24 ...       | 38.4            | 38.3   | 38.2   | 48     | 52   | 28           | 32   | 328             | " ...               | 24th.—Do. yellowish, traces of petechiæ, left, one extravasation. |
| " 25 ...       | 38.0            | 38.0   | 38.2   | 48     | 52   | 28           | 36   | 329             | " ...               | 25th.—Do. do.   |
| " 26 ...       | 38.1            | 37.8   | 38.1   | 52     | 48   | 32           | 36   | 330             | " ...               | 26th.—Do. do.   |
| " 27 ...       | 38.2            | 38.1   | 37.8   | 44     | 52   | 36           | 24   | 331             | " ...               | 27th.—Right conjunctiva clear; left, extravasation fading.        |
| " 28 ...       | 38.2            | 38.1   | 38.0   | 48     | 48   | 32           | 32   | 332             | " ...               | 28th.—Conjunctivæ clear.  |
| " 29 ...       | 38.0            | 37.8   | 38.1   | 48     | 48   | 24           | 28   | 333             | " ...               | 29th.—Do.   |
| " 30 ...       | 38.2            | 38.0   | 38.1   | 52     | 56   | 24           | 28   | 334             | " ...               | 30th.—Do. slight eczema over rump, dressed with Cyona.            |
| " 31 ...       | 38.1            | 38.1   | 38.0   | 44     | 48   | 20           | 28   | 335             | " ...               | 31st.—Do.   |
| November 1 ... | 38.0            | 38.0   | 38.1   | 56     | 52   | 24           | 24   | 336             | " ...               | 1st.—Do.  |
| " 2 ...        | 38.0            | 38.1   | 38.0   | 44     | 52   | 16           | 24   | 337             | " ...               | 2nd.—Do.  |
| " 3 ...        | 37.7            | 37.8   | 38.3   | 40     | 52   | 16           | 32   | 338             | " ...               | 3rd.—Do. irritation of skin continues.                            |
| " 4 ...        | 38.1            | 38.0   | 38.1   | 44     | 48   | 16           | 28   | 339             | " ...               | 4th.—Do.  |
| " 5 ...        | 38.0            | 38.0   | 38.1   | 40     | 44   | 16           | 24   | 340             | " ...               | 5th.—Do. irritation ceased.                                       |
| " 6 ...        | 37.7            | 38.0   | 38.1   | 48     | 48   | 20           | 24   | 341             | " ...               | 6th.—Do.  |
| " 7 ...        | 38.1            | 38.1   | 38.0   | 40     | 48   | 16           | 28   | 342             | " ...               | 7th.—Do.  |
| " 8 ...        | 38.1            | 38.2   | 38.2   | 52     | 48   | 20           | 16   | 343             | " ...               | 8th.—Do.  |
| " 9 ...        | 38.1            | 38.1   | 38.2   | 44     | 48   | 20           | 28   | 344             | " ...               | 9th.—Do.  |
| " 10 ...       | 38.2            | 38.1   | 38.2   | 44     | 52   | 20           | 24   | 345             | " ...               | 10th.—Do.   |
| " 11 ...       | 38.1            | 38.1   | 38.2   | 52     | 52   | 20           | 24   | 346             | " ...               | 11th.—Do.   |
| " 12 ...       | 38.5            | 38.2   | 37.8   | 56     | 44   | 16           | 24   | 347             | " ...               | 12th.—Do.   |
| " 13 ...       | 38.4            | 38.0   | 38.2   | 56     | 52   | 28           | 28   | 348             | " ...               | 13th.—Do.   |



| Date.          | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in Blood. | REMARKS.  |
|----------------|-----------------|--------|--------|--------|------|--------------|------|-----------------|---------------------|---|
|                | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                     |   |
| 1894.          |                 |        |        |        |      |              |      |                 |                     |   |
| Novem. 14 ...  | 38.1            | 38.1   | 38.0   | 40     | 52   | 20           | 20   | 349             | Absent              | 14th.—Conjunctivæ clear.  |
| „ 15 ...       | 37.7            | 38.0   | 38.3   | 44     | 52   | 12           | 28   | 350             | „ ...               | 15th.— Do.  |
| „ 16 ...       | 38.3            | 37.8   | 37.8   | 44     | 44   | 28           | 32   | 351             | „ ...               | 16th.— Do.  |
| „ 17 ...       | 38.3            | 37.8   | 38.1   | 48     | 44   | 20           | 36   | 352             | „ ...               | 17th.—Right conjunctiva clear; left, one spot.  |
| „ 18 ...       | 38.2            | 38.1   | 38.1   | 40     | 44   | 20           | 28   | 353             | „ ...               | 18th.— Do. left, spot fading.   |
| „ 19 ...       | 37.8            | 37.8   | 38.1   | 36     | 48   | 16           | 20   | 354             | „ ...               | 19th.—Conjunctivæ clear.  |
| „ 20 ...       | 38.0            | 38.1   | 38.2   | 36     | 48   | 12           | 40   | 355             | „ ...               | 20th.— Do.  |
| „ 21 ...       | 38.0            | 38.1   | 38.2   | 36     | 52   | 12           | 20   | 356             | „ ...               | 21st.— Do.  |
| „ 22 ...       | 38.0            | 38.0   | 38.1   | 36     | 48   | 12           | 24   | 357             | „ ...               | 22nd.— Do.  |
| „ 23 ...       | 38.0            | 38.0   | 38.3   | 40     | 44   | 16           | 20   | 358             | „ ...               | 23rd.— Do.  |
| „ 24 ...       | 38.3            | 37.8   | 38.1   | 44     | 44   | 16           | 16   | 359             | „ ...               | 24th.— Do.  |
| „ 25 ...       | 38.0            | 37.8   | 38.0   | 44     | 48   | 16           | 16   | 360             | „ ...               | 25th.— Do.  |
| „ 26 ...       | 38.2            | 38.0   | 38.1   | 40     | 44   | 12           | 24   | 361             | „ ...               | 26th.— Do.  |
| „ 27 ...       | 38.2            | 37.8   | 38.0   | 40     | 48   | 16           | 16   | 362             | „ ...               | 27th.— Do.  |
| „ 28 ...       | 38.0            | 37.8   | 38.2   | 40     | 44   | 12           | 24   | 363             | „ ...               | 28th.— Do.  |
| „ 29 ...       | 38.1            | 38.0   | 37.8   | 44     | 48   | 12           | 20   | 364             | „ ...               | 29th.— Do.  |
| „ 30 ...       | 38.0            | 38.0   | 38.2   | 36     | 48   | 12           | 12   | 365             | „ ...               | 30th.— Do.  |
| December 1 ... | 38.1            | 37.7   | 38.2   | 40     | 44   | 12           | 20   | 366             | „ ...               | 1st.— Do.   |
| „ 2 ...        | 38.2            | 37.8   | 38.1   | 40     | 48   | 12           | 16   | 367             | „ ...               | 2nd.— Do.   |
| „ 3 ...        | 37.8            | 38.0   | 38.1   | 48     | 52   | 16           | 24   | 368             | „ ...               | 3rd.— Do.   |
| „ 4 ...        | 38.3            | 38.0   | 38.2   | 52     | 48   | 20           | 16   | 369             | „ ...               | 4th.— Do.   |
| „ 5 ...        | 37.7            | 38.0   | 38.3   | 52     | 52   | 20           | 16   | 370             | „ ...               | 5th.— Do.   |
| „ 6 ...        | 38.1            | 38.1   | 38.2   | 56     | 36   | 24           | 12   | 371             | „ ...               | 6th.— Do.   |
| „ 7 ...        | 37.8            | 37.8   | 38.2   | 48     | 36   | 16           | 16   | 372             | „ ...               | 7th.— Do.   |
| „ 8 ...        | 38.2            | 38.1   | 38.3   | 48     | 48   | 20           | 20   | 373             | „ ...               | 8th.— Do.   |
| „ 9 ...        | 38.3            | 37.8   | 38.1   | 40     | 44   | 16           | 24   | 374             | „ ...               | 9th.— Do.   |
| „ 10 ...       | 38.1            | 38.1   | 38.1   | 44     | 52   | 12           | 16   | 375             | „ ...               | 10th.— Do.  |
| „ 11 ...       | 38.2            | 38.1   | 38.2   | 40     | 44   | 20           | 16   | 376             | „ ...               | 11th.— Do.  |
| „ 12 ...       | 38.1            | 38.0   | 38.2   | 48     | 44   | 16           | 24   | 377             | „ ...               | 12th.— Do.  |
| „ 13 ...       | 38.1            | 38.0   | 38.3   | 48     | 40   | 16           | 24   | 378             | „ ...               | 13th.— Do.  |
| „ 14 ...       | 38.1            | 38.2   | 38.2   | 48     | 56   | 16           | 32   | 379             | „ ...               | 14th.— Do.  |
| „ 15 ...       | 37.7            | 38.1   | 38.2   | 52     | 44   | 12           | 20   | 380             | „ ...               | 15th.— Do.  |
| „ 16 ...       | 38.2            | 37.8   | 38.2   | 44     | 48   | 16           | 16   | 381             | „ ...               | 16th.— Do.  |
| „ 17 ...       | 38.2            | 37.8   | 38.3   | 44     | 48   | 16           | 20   | 382             | „ ...               | 17th.— Do.  |
| „ 18 ...       | 38.2            | 37.7   | 38.1   | 44     | 44   | 24           | 24   | 383             | „ ...               | 18th.— Do.  |
| „ 19 ...       | 37.7            | 38.0   | 38.0   | 40     | 40   | 16           | 20   | 384             | „ ...               | 19th.— Do.  |
| „ 20 ...       | 37.7            | 38.1   | 38.3   | 48     | 44   | 12           | 16   | 385             | „ ...               | 20th.— Do.  |
| „ 21 ...       | 38.2            | 38.0   | 38.4   | 40     | 40   | 14           | 16   | 386             | „ ...               | 21st.— Do.  |
| „ 22 ...       | 38.3            | 38.1   | 38.1   | 40     | 40   | 16           | 20   | 387             | „ ...               | 22nd.— Do.  |
| „ 23 ...       | 37.8            | 38.1   | 38.3   | 52     | 44   | 12           | 16   | 388             | „ ...               | 23rd.— Do.  |
| „ 24 ...       | 37.8            | 38.0   | 38.1   | 44     | 40   | 16           | 16   | 389             | „ ...               | 24th.— Do.  |
| „ 25 ...       | 37.8            | 38.3   | 38.4   | 44     | 52   | 12           | 20   | 390             | „ ...               | 25th.—Right conjunctiva clear; left congested, with one claret coloured spot. Abdominal pain. |
| „ 26 ...       | 38.0            | 38.0   | 38.3   | 48     | 44   | 16           | 20   | 391             | „ ...               | 26th.—Right conjunctiva clear, left clearer.  |
| „ 27 ...       | 37.8            | 38.0   | 38.1   | 46     | 56   | 20           | 20   | 392             | „ ...               | 27th.—Conjunctivæ clear.  |
| „ 28 ...       | 38.1            | 38.0   | 38.1   | 44     | 52   | 16           | 16   | 393             | „ ...               | 28th.— Do.  |
| „ 29 ...       | 37.8            | 38.1   | 38.5   | 48     | 40   | 16           | 16   | 394             | „ ...               | 29th.— Do.  |
| „ 30 ...       | 38.1            | 38.1   | 38.2   | 44     | 44   | 12           | 16   | 395             | „ ...               | 30th.— Do.  |
| „ 31 ...       | 38.1            | 38.1   | 38.1   | 48     | 52   | 14           | 20   | 396             | „ ...               | 31st.— Do.  |
| 1895.          |                 |        |        |        |      |              |      |                 |                     |   |
| January 1 ...  | 38.0            | ...    | ...    | 40     | ...  | 20           | ...  | 397             | „ ...               | 1st.— Do.   |

TABLE

*Showing the daily fodder ration of Horse No. LXXXIX from November 19th, 1893, and the daily quantity of dung passed from June 4th, 1894, to January 1st, 1895.*

From November 19th, 1893, to July 3rd, 1894, the fodder given daily was 20 lbs. of hay and 10 lbs. of lucerne. Three pounds of gram were also given daily from the 19th November to December 1st, 1893, after which date, until February 14th, 1894, the ration was 6 lbs. of gram and  $1\frac{1}{2}$  ounces of salt. From the 15th February to 20th March 1894, 1 lb. of bran and 3 lbs. of linseed were given daily in addition.

| Date.     | Hay<br>Lbs. | Lucerne<br>Lbs. | Salt<br>Oz. | Gram<br>Lbs. | Wheat<br>Lbs. | Bran<br>Lbs. | Linseed<br>Lbs. | Exercise<br>Daily<br>Miles. | Date  | Hay<br>Lbs. | Lucerne<br>Lbs. | Salt<br>Oz. | Barley<br>Lbs. | Bran<br>Lbs. | Exercise<br>Miles. | Dung<br>Lbs. | Medicine. |     |  |
|-----------|-------------|-----------------|-------------|--------------|---------------|--------------|-----------------|-----------------------------|-------|-------------|-----------------|-------------|----------------|--------------|--------------------|--------------|-----------|-----|--|
| 1894.     |             |                 |             |              |               |              |                 |                             | 1894. |             |                 |             |                |              |                    |              |           |     |  |
| March     | 21 ...      | 20              | 10          | 2            | 4             | ...          | 0.6             | 5                           | June  | 8 ...       | 20              | 10          | 3              | 10           | 1.8                | 5            | ...       | ... |  |
| "         | 22 ...      | "               | "           | ...          | ...           | ...          | ...             | "                           | "     | 9 ...       | "               | "           | "              | "            | "                  | "            | ...       | ... |  |
| "         | 23 ...      | "               | "           | 1            | 2             | 3            | ...             | "                           | "     | 10 ...      | "               | "           | "              | "            | "                  | "            | ...       | ... |  |
| "         | 24 ...      | "               | "           | 3            | "             | 3            | 2               | 3                           | "     | 11 ...      | "               | "           | "              | "            | "                  | "            | ...       | ... |  |
| "         | 25 ...      | "               | "           | "            | "             | 3            | "               | "                           | "     | 12 ...      | "               | "           | "              | "            | "                  | "            | ...       | ... |  |
| "         | 26 ...      | "               | "           | "            | "             | 3.5          | "               | "                           | "     | 13 ...      | "               | "           | "              | "            | "                  | "            | ...       | ... |  |
| "         | 27 ...      | "               | "           | "            | "             | 4            | "               | "                           | "     | 14 ...      | "               | "           | "              | "            | "                  | "            | ...       | ... |  |
| "         | 28 ...      | "               | "           | "            | "             | 2.5          | "               | "                           | "     | 15 ...      | "               | "           | "              | "            | "                  | "            | ...       | ... |  |
| "         | 29 ...      | "               | "           | 4            | 2             | "            | "               | "                           | "     | 16 ...      | "               | "           | "              | "            | "                  | "            | ...       | ... |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | "               | "                           | "     | 17 ...      | "               | "           | "              | "            | "                  | "            | ...       | ... |  |
| "         | 31 ...      | "               | "           | "            | "             | "            | "               | "                           | "     | 18 ...      | "               | "           | "              | "            | "                  | "            | ...       | ... |  |
| April     |             |                 |             |              |               |              |                 |                             | "     | 19 ...      | "               | "           | "              | "            | 6                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | 3            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 29 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| "         | 31 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| May       |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| June      |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| July      |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| August    |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| September |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| October   |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| November  |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| December  |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| January   |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| February  |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| March     |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| April     |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| May       |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| June      |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| July      |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| August    |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| September |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 25 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 26 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 27 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 28 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 29 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
| "         | 30 ...      | "               | "           | "            | "             | "            | ...             | ...                         |       |             |                 |             |                |              |                    |              |           |     |  |
| October   |             |                 |             |              |               |              |                 |                             | "     | 20 ...      | "               | "           | "              | "            | 5                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 21 ...      | "               | "           | "              | "            | 5.5                | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 22 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 23 ...      | "               | "           | "              | "            | "                  | ...          | ...       |     |  |
|           |             |                 |             |              |               |              |                 |                             | "     | 24 ...      | "               | "           |                |              |                    |              |           |     |  |



| Date<br>1894.   | Hay<br>Lbs. | Lucerne<br>Lbs. | Salt<br>Oz. | Barley<br>Lbs. | Bran<br>Lbs. | Exer-<br>cise<br>miles. | Dung<br>Lbs. | Medicine. | Date.          | Hay<br>Lbs. | Lucerne<br>Lbs. | Salt<br>Oz. | Barley<br>Lbs. | Bran<br>Lbs. | Exer-<br>cise<br>Miles. | Dung<br>Lbs. | Medicine. |     |
|-----------------|-------------|-----------------|-------------|----------------|--------------|-------------------------|--------------|-----------|----------------|-------------|-----------------|-------------|----------------|--------------|-------------------------|--------------|-----------|-----|
| 1894.           |             |                 |             |                |              |                         |              |           | 1894.          |             |                 |             |                |              |                         |              |           |     |
| August 17 ...   | 23          | 10              | 3           | ...            | 8            | ...                     | 32.0         | ...       | October 29 ... | 22          | 10              | 1.5         | 4.0            | 6            | 6                       | 54.0         | ...       |     |
| " 18 ...        | 24          | "               | "           | 2              | 6            | ...                     | 39.5         | ...       | " 30 ...       | 19          | "               | "           | "              | "            | "                       | 45.0         | ...       |     |
| " 19 ...        | 27          | "               | "           | "              | 5            | ...                     | 35.0         | ...       | " 31 ...       | 25          | "               | "           | "              | "            | "                       | 55.0         | ...       |     |
| " 20 ...        | 25          | "               | "           | 0.69           | 8            | ...                     | 32.5         | ...       | November 1 ... | 24          | 10              | 1.5         | 4              | 6            | 6                       | 55.0         | ...       |     |
| " 21 ...        | 23          | "               | "           | "              | 6            | ...                     | 25.5         | ...       | " 2 ...        | 20          | "               | "           | "              | "            | "                       | 49.25        | ...       |     |
| " 22 ...        | 24          | "               | "           | 0.69           | "            | ...                     | "            | ...       | " 3 ...        | 23          | "               | "           | 1              | 4            | "                       | 45.5         | ...       |     |
| " 23 ...        | 28          | "               | "           | "              | "            | ...                     | 33.0         | ...       | " 4 ...        | 20          | "               | "           | ...            | 2            | "                       | 46.5         | ...       |     |
| " 24 ...        | 23          | "               | "           | "              | "            | 1.5                     | 44.0         | ...       | " 5 ...        | 19          | "               | "           | ...            | 2            | "                       | 47.0         | ...       |     |
| " 25 ...        | 28          | 20 dry          | "           | "              | "            | 1.6                     | 46.5         | ...       | " 6 ...        | 24          | "               | "           | ...            | 6            | "                       | 53.5         | ...       |     |
| " 26 ...        | 10          | "               | "           | "              | "            | 1.8                     | 46.0         | ...       | " 7 ...        | 26          | "               | "           | ...            | "            | "                       | 59.5         | ...       |     |
| " 27 ...        | 26          | "               | "           | "              | "            | 2.0                     | 42.5         | ...       | " 8 ...        | 22          | "               | "           | 4              | "            | "                       | 57.0         | ...       |     |
| " 28 ...        | 25          | "               | "           | "              | "            | 2.3                     | 43.5         | ...       | " 9 ...        | 21          | "               | "           | "              | "            | "                       | 62.5         | ...       |     |
| " 29 ...        | 21          | "               | "           | "              | "            | 2.5                     | 40.5         | ...       | " 10 ...       | 26          | "               | "           | "              | "            | "                       | 51.0         | ...       |     |
| " 30 ...        | 24          | "               | "           | 2.0            | "            | 2.8                     | 44.5         | ...       | " 11 ...       | 22          | "               | "           | "              | "            | "                       | 52.5         | ...       |     |
| " 31 ...        | 30          | "               | "           | "              | "            | 3.0                     | 33.5         | ...       | " 12 ...       | 20          | "               | "           | "              | "            | "                       | 49.5         | ...       |     |
| September 1 ... | 24          | "               | "           | "              | "            | 3.2                     | 44.5         | ...       | " 13 ...       | 23          | "               | "           | "              | "            | "                       | 50.5         | ...       |     |
| " 2 ...         | 25          | "               | "           | "              | "            | 3.4                     | 45.0         | ...       | " 14 ...       | 26          | "               | "           | "              | "            | "                       | 51.5         | ...       |     |
| " 3 ...         | 24          | "               | "           | 3.0            | "            | 3.6                     | "            | ...       | " 15 ...       | 24          | "               | "           | "              | "            | "                       | 42.0         | ...       |     |
| " 4 ...         | 21          | "               | "           | "              | "            | 4.0                     | "            | ...       | " 16 ...       | 22          | "               | "           | "              | "            | 8                       | 40.0         | ...       |     |
| " 5 ...         | 19          | "               | "           | "              | "            | 4.25                    | 43.5         | ...       | " 17 ...       | 26          | "               | "           | "              | "            | 6                       | 58.0         | ...       |     |
| " 6 ...         | 29          | "               | "           | "              | "            | 4.5                     | 47.5         | ...       | " 18 ...       | 24          | "               | "           | "              | "            | "                       | 49.5         | ...       |     |
| " 7 ...         | 26          | "               | "           | 4.0            | "            | 4.6                     | 39.0         | ...       | " 19 ...       | 20          | "               | "           | "              | "            | "                       | 55.0         | ...       |     |
| " 8 ...         | 28          | "               | "           | "              | "            | 4.75                    | 46.0         | ...       | " 20 ...       | 22          | "               | "           | "              | "            | "                       | 46.5         | ...       |     |
| " 9 ...         | 29          | "               | "           | "              | "            | 5.0                     | 47.5         | ...       | " 21 ...       | 23          | "               | "           | "              | "            | "                       | 43.5         | ...       |     |
| " 10 ...        | 35          | 10              | "           | "              | "            | 5.2                     | 53.5         | ...       | " 22 ...       | 22          | "               | "           | "              | "            | 8                       | 44.0         | ...       |     |
| " 11 ...        | 27          | "               | "           | "              | "            | 5.4                     | 56.5         | ...       | " 23 ...       | 38          | "               | "           | "              | "            | 6                       | 48.5         | ...       |     |
| " 12 ...        | 33          | "               | "           | "              | "            | 5.6                     | 52.5         | ...       | " 24 ...       | 26          | "               | "           | "              | "            | "                       | 50.5         | ...       |     |
| " 13 ...        | 30          | "               | "           | "              | "            | 5.8                     | 41.0         | ...       | " 25 ...       | 20          | "               | "           | "              | "            | "                       | 45.5         | ...       |     |
| " 14 ...        | 26          | "               | "           | "              | "            | 6                       | 46.5         | ...       | " 26 ...       | 30          | "               | "           | "              | "            | "                       | 43.5         | ...       |     |
| " 15 ...        | 21          | "               | "           | "              | "            | "                       | 43.0         | ...       | " 27 ...       | 29          | "               | "           | "              | "            | "                       | 42.0         | ...       |     |
| " 16 ...        | 22          | "               | "           | "              | "            | "                       | 38.0         | ...       | " 28 ...       | 28          | "               | "           | "              | "            | "                       | 44.0         | ...       |     |
| " 17 ...        | 26          | "               | "           | "              | "            | "                       | 54.0         | ...       | " 29 ...       | 23          | "               | "           | "              | "            | "                       | 45.5         | ...       |     |
| " 18 ...        | 32          | "               | "           | "              | "            | "                       | 43.0         | ...       | " 30 ...       | 20          | "               | "           | "              | "            | "                       | 47.5         | ...       |     |
| " 19 ...        | 31          | "               | "           | "              | "            | "                       | 47.25        | ...       | December 1 ... | 25          | 10              | 1.5         | 4              | 6            | 6                       | 49.0         | ...       |     |
| " 20 ...        | 24          | "               | 1.5         | "              | "            | "                       | 41.25        | ...       | " 2 ...        | 28          | "               | "           | "              | "            | "                       | 55.0         | ...       |     |
| " 21 ...        | "           | "               | "           | "              | "            | "                       | 45.50        | ...       | " 3 ...        | 27          | "               | "           | "              | "            | "                       | 6.4          | 42.5      | ... |
| " 22 ...        | "           | "               | "           | "              | "            | "                       | 54.75        | ...       | " 4 ...        | 23          | "               | "           | "              | "            | "                       | 6.3          | 55.0      | ... |
| " 23 ...        | 26          | "               | "           | "              | "            | "                       | 52.50        | ...       | " 5 ...        | 25          | "               | "           | "              | "            | "                       | 6.4          | 49.0      | ... |
| " 24 ...        | "           | "               | "           | "              | "            | "                       | 48.00        | ...       | " 6 ...        | 20          | "               | "           | "              | "            | "                       | 57.0         | ...       |     |
| " 25 ...        | 24          | "               | "           | "              | "            | "                       | 54.50        | ...       | " 7 ...        | 23          | "               | "           | "              | "            | "                       | 47.0         | ...       |     |
| " 26 ...        | 26          | "               | "           | "              | "            | "                       | 52.25        | ...       | " 8 ...        | 26          | "               | "           | "              | "            | "                       | 54.25        | ...       |     |
| " 27 ...        | 24          | "               | "           | "              | "            | "                       | 58.50        | ...       | " 9 ...        | 23          | "               | "           | "              | "            | 3.2                     | 43.0         | ...       |     |
| " 28 ...        | "           | "               | "           | "              | "            | "                       | 51.50        | ...       | " 10 ...       | 20          | "               | "           | "              | "            | "                       | 58.0         | ...       |     |
| " 29 ...        | 28          | "               | "           | "              | "            | "                       | 60.75        | ...       | " 11 ...       | 21          | "               | "           | "              | "            | "                       | 5.4          | 60.0      | ... |
| " 30 ...        | 21          | "               | "           | "              | "            | "                       | 59.00        | ...       | " 12 ...       | 21          | "               | "           | "              | "            | "                       | 6.4          | 54.5      | ... |
| October 1 ...   | 21          | "               | "           | "              | "            | "                       | 53.5         | ...       | " 13 ...       | 20          | "               | "           | "              | "            | "                       | 6.4          | 48.5      | ... |
| " 2 ...         | 24          | "               | "           | "              | "            | "                       | 55.0         | ...       | " 14 ...       | 22          | "               | "           | "              | "            | "                       | 44.0         | ...       |     |
| " 3 ...         | 20          | "               | "           | "              | "            | "                       | 52.0         | ...       | " 15 ...       | 21          | "               | "           | "              | "            | "                       | 53.5         | ...       |     |
| " 4 ...         | 27          | "               | "           | "              | "            | "                       | 45.0         | ...       | " 16 ...       | 23          | "               | "           | "              | "            | "                       | 59.0         | ...       |     |
| " 5 ...         | 20          | "               | "           | "              | "            | "                       | 45.25        | ...       | " 17 ...       | 27          | "               | "           | "              | "            | "                       | 53.0         | ...       |     |
| " 6 ...         | 37          | "               | "           | "              | "            | "                       | 48.0         | ...       | " 18 ...       | 19          | "               | "           | "              | "            | "                       | 45.5         | ...       |     |
| " 7 ...         | 24          | "               | "           | "              | "            | "                       | 59.5         | ...       | " 19 ...       | 20          | "               | "           | "              | "            | "                       | 49.5         | ...       |     |
| " 8 ...         | 31          | "               | "           | "              | "            | "                       | 52.0         | ...       | " 20 ...       | 28          | "               | "           | "              | "            | "                       | 50.0         | ...       |     |
| " 9 ...         | 22          | "               | "           | "              | "            | "                       | 57.5         | ...       | " 21 ...       | 15          | "               | "           | "              | "            | "                       | 48.5         | ...       |     |
| " 10 ...        | 20          | "               | "           | "              | "            | "                       | 51.5         | ...       | " 22 ...       | 18          | "               | "           | "              | "            | "                       | 46.5         | ...       |     |
| " 11 ...        | 28          | "               | "           | "              | "            | "                       | 42.0         | ...       | " 23 ...       | 24          | "               | "           | "              | "            | "                       | 47.5         | ...       |     |
| " 12 ...        | 27          | "               | "           | "              | "            | "                       | 45.0         | ...       | " 24 ...       | 25          | "               | "           | "              | "            | "                       | 62.75        | ...       |     |
| " 13 ...        | 25          | "               | "           | "              | "            | "                       | 48.0         | ...       | " 25 ...       | 18          | "               | "           | "              | "            | "                       | 53.0         | ...       |     |
| " 14 ...        | 24          | "               | "           | "              | "            | "                       | 54.5         | ...       | " 26 ...       | 23          | "               | "           | "              | "            | "                       | 58.0         | ...       |     |
| " 15 ...        | 26          | "               | "           | "              | "            | "                       | 49.5         | ...       | " 27 ...       | 20          | "               | "           | "              | "            | "                       | 56.75        | ...       |     |
| " 16 ...        | 23          | "               | "           | "              | "            | "                       | 59.0         | ...       | " 28 ...       | 24          | "               | "           | "              | "            | "                       | 58.5         | ...       |     |
| " 17 ...        | 18          | "               | "           | "              | "            | "                       | 53.0         | ...       | " 29 ...       | 28          | "               | "           | "              | "            | "                       | 38.0         | ...       |     |
| " 18 ...        | 31          | "               | "           | "              | "            | "                       | 57.0         | ...       | " 30 ...       | 18          | "               | "           | "              | "            | "                       | 45.5         | ...       |     |
| " 19 ...        | 24          | "               | "           | "              | "            | "                       | 53.0         | ...       | " 31 ...       | 17          | "               | "           | "              | "            | "                       | ...          | ...       |     |
| " 20 ...        | 26          | "               | "           | "              | "            | "                       | 54.0         | ...       | 1895.          |             |                 |             |                |              |                         |              |           |     |
| " 21 ...        | 25          | "               | "           | "              | "            | "                       | 55.0         | ...       | January 1 ...  | 22          | "               | "           | "              | "            | "                       | 45.5         | 1,061.3   |     |
| " 22 ...        | 26          | "               | "           | "              | "            | "                       | 49.5         | ...       |                |             |                 |             |                |              |                         |              |           |     |
| " 23 ...        | "           | "               | "           | "              | "            | "                       | 58.0         | ...       |                |             |                 |             |                |              |                         |              |           |     |
| " 24 ...        | 22          | "               | "           | "              | "            | "                       | 56.0         | ...       |                |             |                 |             |                |              |                         |              |           |     |
| " 25 ...        | 26          | "               | "           | "              | "            | "                       | 55.5         | ...       |                |             |                 |             |                |              |                         |              |           |     |
| " 26 ...        | 23          | "               | "           | "              | "            | "                       | 50.0         | ...       |                |             |                 |             |                |              |                         |              |           |     |
| " 27 ...        | "           | "               | "           | "              | "            | "                       | 45.0         | ...       |                |             |                 |             |                |              |                         |              |           |     |
| " 28 ...        | 27          | "               | "           | "              | "            | "                       | 51.5         | ...       |                |             |                 |             |                |              |                         |              |           |     |

Linseed  
Oil.  
Oss.  
Body  
Weight,  
Lbs.

1,066.4  
42.0  
40.0  
58.0  
49.5  
55.0  
46.5  
43.5  
44.0  
48.5  
50.5  
45.5  
43.5  
42.0  
44.0  
45.5  
47.0  
54.25  
43.0  
58.0  
60.0  
54.5  
48.5  
47.5  
62.75  
53.0  
58.0  
56.75  
58.5  
38.0  
45.5

1,063.3  
1,056.1  
1,061.3



| Date.           | Quantity collected. | Specific Gravity. | Albumen. | Total Hippuric Acid excreted in the urine during 24 hours. Grammes. | Urea. Grammes per 100 c.c. | Total Urea excreted in the urine during 24 hours. Grammes. | Water drunk during 24 hours. Litres. | TEMPERATURE IN SHADE °F. |          | Humidity. | Hæmatozoa in the Blood. |
|-----------------|---------------------|-------------------|----------|---|----------------------------|--|--------------------------------------|--------------------------|----------|-----------|-------------------------|
|                 |                     |                   |          |   |                            |  |                                      | Maximum.                 | Minimum. |           |                         |
| 1893.           |                     |                   |          |   |                            |  |                                      |                          |          |           |                         |
| November 19 ... | 1,630               | 1,054             | Nil.     | 27.71   | 1.60                       | 26.08  | 11.40                                | 85.5                     | 64.4     | 76        | Health.                 |
| " 20 ...        | 1,030               | 1,055             | "        | 17.51   | 1.80                       | 18.54  | 11.97                                | 86.0                     | 61.9     | 80        | "                       |
| " 21 ...        | 1,530               | 1,050             | "        | 16.83   | 1.70                       | 26.01  | 13.68                                | 87.0                     | 61.9     | 85        | "                       |
| " 22 ...        | 1,400               | 1,050             | "        | 2.80  | 1.80                       | 25.20  | 13.68                                | 87.5                     | 63.4     | 83        | "                       |
| " 23 ...        | 1,030               | 1,056             | "        | 33.99   | 1.85                       | 19.05  | 18.81                                | 87.5                     | 60.4     | 79        | "                       |
| " 24 ...        | 910                 | 1,054             | Trace.   | 15.47   | 1.50                       | 13.65  | 17.10                                | 85.5                     | 67.9     | 58        | Inoculated.             |
| " 25 ...        | 1,130               | 1,054             | "        | 12.43   | 1.50                       | 16.95  | 8.55                                 | 87.5                     | 63.4     | 57        | Absent.                 |
| " 26 ...        | 1,020               | 1,057             | Nil.     | 22.44   | 1.80                       | 18.36  | 9.69                                 | 87.5                     | 68.4     | 59        | "                       |
| " 27 ...        | 1,390               | 1,056             | "        | 23.63   | 1.20                       | 16.68  | 16.53                                | 88.0                     | 61.4     | 66        | "                       |
| " 28 ...        | 2,020               | 1,050             | "        | 34.34   | 1.40                       | 28.28  | 11.97                                | 88.0                     | 64.4     | 69        | "                       |
| " 29 ...        | 1,425               | 1,046             | "        | 48.45   | 1.15                       | 16.38  | 18.81                                | 90.0                     | 65.4     | 74        | "                       |
| " 30 ...        | 1,200               | 1,062             | "        | 39.60   | 1.80                       | 21.60  | 17.67                                | 89.5                     | 63.9     | 59        | "                       |
| December 1 ...  | 1,550               | 1,050             | "        | 26.35   | 1.40                       | 21.70  | 19.38                                | 89.5                     | 64.9     | 63        | Few.                    |
| " 2 ...         | 800                 | 1,052             | "        | 26.40   | 1.30                       | 10.40  | 15.46                                | 89.5                     | 60.9     | 74        | Numerous.               |
| " 3 ...         | 1,600               | 1,050             | "        | ...   | 2.00                       | 32.00  | 9.69                                 | 88.6                     | 56.4     | 49        | "                       |
| " 4 ...         | 2,700               | 1,054             | "        | ...   | 4.30                       | 116.10   | 20.52                                | 87.5                     | 55.4     | 52        | Very num.               |
| " 5 ...         | 2,810               | 1,062             | Trace.   | 47.77   | 3.00                       | 84.30  | 14.26                                | 84.0                     | 54.9     | 52        | Few.                    |
| " 6 ...         | 1,540               | 1,062             | Nil.     | 1.54  | 5.00                       | 77.00  | 6.84                                 | 82.6                     | 52.4     | 62        | Absent.                 |
| " 7 ...         | 1,500               | 1,062             | Trace.   | 25.50   | 3.00                       | 45.00  | 6.26                                 | 83.6                     | 53.4     | 56        | "                       |
| " 8 ...         | 550                 | 1,064             | Nil.     | 9.35  | 2.70                       | 14.85  | 21.66                                | 85.5                     | 53.9     | 59        | "                       |
| " 9 ...         | 1,900               | 1,064             | "        | 62.70   | 2.40                       | 45.60  | 22.80                                | 86.5                     | 56.4     | 59        | "                       |
| " 10 ...        | 600                 | 1,064             | "        | 19.80   | 2.70                       | 16.20  | 21.09                                | 83.6                     | 53.9     | 55        | "                       |
| " 11 ...        | 1,200               | 1,050             | "        | 13.20   | 2.60                       | 31.20  | 13.68                                | 83.6                     | 50.5     | 56        | "                       |
| " 12 ...        | 200                 | 1,060             | "        | 6.60  | 2.70                       | 5.40   | 19.95                                | 82.6                     | 46.5     | 54        | "                       |
| " 13 ...        | 800                 | 1,052             | "        | 26.40   | 2.30                       | 18.40  | 21.66                                | 82.6                     | 49.0     | 49        | "                       |
| " 14 ...        | 1,100               | 1,052             | "        | 18.70   | 2.00                       | 22.00  | 19.95                                | 82.1                     | 49.5     | 45        | "                       |
| " 15 ...        | 1,350               | 1,058             | "        | 14.85   | 2.15                       | 29.02  | 15.96                                | 80.5                     | 49.0     | 50        | "                       |
| " 16 ...        | 1,430               | 1,062             | "        | 47.19   | 2.10                       | 30.03  | 15.39                                | 79.6                     | 53.9     | 50        | "                       |
| " 17 ...        | 1,800               | 1,064             | "        | 30.60   | 2.20                       | 39.60  | 9.12                                 | 80.6                     | 53.9     | 58        | "                       |
| " 18 ...        | 1,550               | 1,060             | "        | 12.40   | 2.40                       | 37.20  | 22.80                                | 82.1                     | 49.0     | 51        | "                       |
| " 19 ...        | 2,000               | 1,052             | "        | 16.00   | 2.00                       | 40.00  | 35.34                                | 85.0                     | 48.5     | 46        | "                       |
| " 20 ...        | 2,300               | 1,060             | "        | 20.70   | 2.40                       | 55.20  | 29.07                                | 85.5                     | 47.5     | 44        | "                       |
| " 21 ...        | 1,370               | 1,064             | "        | 15.07   | 2.20                       | 30.14  | 21.66                                | 85.0                     | 48.0     | 54        | "                       |
| " 22 ...        | 1,900               | 1,064             | "        | 20.90   | 1.80                       | 34.20  | 6.84                                 | 85.5                     | 50.0     | 54        | "                       |
| " 23 ...        | 1,760               | 1,066             | "        | 19.36   | 2.00                       | 35.20  | 30.21                                | 84.0                     | 49.5     | 54        | "                       |
| " 24 ...        | 1,980               | 1,064             | "        | 43.50   | 1.60                       | 31.68  | 23.94                                | 83.1                     | 50.5     | 59        | "                       |
| " 25 ...        | 1,280               | 1,064             | "        | 28.16   | 2.20                       | 28.16  | 22.23                                | 84.1                     | 50.5     | 65        | "                       |
| " 26 ...        | 2,020               | 1,064             | "        | 66.66   | 2.00                       | 40.40  | 17.67                                | 84.5                     | 53.4     | 66        | "                       |
| " 27 ...        | 2,010               | 1,064             | "        | ...   | 1.70                       | 35.87  | 11.97                                | 85.0                     | 52.4     | 46        | "                       |
| " 28 ...        | 2,200               | 1,063             | "        | 48.40   | 2.20                       | 48.40  | 15.39                                | 84.0                     | 53.4     | 53        | "                       |
| " 29 ...        | 2,000               | 1,054             | "        | 34.00   | 2.00                       | 40.00  | 17.67                                | 85.0                     | 53.9     | 64        | "                       |
| " 30 ...        | 1,180               | 1,064             | "        | 20.06   | 2.50                       | 29.50  | 9.12                                 | 85.5                     | 54.4     | 80        | "                       |
| " 31 ...        | 1,010               | 1,064             | "        | 44.44   | 1.70                       | 17.17  | 15.39                                | 84.5                     | 57.4     | 73        | "                       |
| 1894.           |                     |                   |          |   |                            |  |                                      |                          |          |           |                         |
| January 1 ...   | 2,200               | 1,057             | Nil.     | 48.40   | 1.05                       | 23.10  | 15.39                                | 84.0                     | 52.9     | 75        | Absent.                 |
| " 2 ...         | 1,880               | 1,053             | "        | 13.16   | 0.90                       | 16.92  | 17.67                                | 85.0                     | 52.4     | 80        | "                       |
| " 3 ...         | 1,050               | 1,058             | "        | 8.40  | 1.50                       | 15.75  | 17.67                                | 84.5                     | 54.4     | 75        | "                       |
| " 4 ...         | 1,200               | 1,066             | "        | 9.60  | 2.40                       | 28.80  | 21.66                                | 85.0                     | 52.4     | 67        | "                       |
| " 5 ...         | 1,600               | 1,061             | "        | 14.40   | 1.90                       | 30.40  | 11.97                                | 85.5                     | 57.4     | 71        | "                       |
| " 6 ...         | 1,800               | 1,063             | "        | 61.20   | 1.30                       | 23.40  | 13.11                                | 88.5                     | 60.4     | 67        | "                       |
| " 7 ...         | 1,025               | 1,058             | Trace.   | 18.42   | 1.10                       | 11.27  | 19.95                                | 86.5                     | 58.4     | 57        | "                       |
| " 8 ...         | 1,775               | 1,058             | Nil.     | 39.00   | 1.10                       | 19.52  | 19.95                                | 86.0                     | 50.0     | 54        | "                       |
| " 9 ...         | 1,475               | 1,058             | "        | ...   | 1.20                       | 17.70  | 13.11                                | 86.0                     | 50.5     | 57        | "                       |
| " 10 ...        | 1,660               | 1,052             | "        | 36.52   | 1.15                       | 19.09  | 21.66                                | 84.5                     | 50.0     | 52        | "                       |
| " 11 ...        | 2,000               | 1,062             | "        | ...   | 1.45                       | 29.00  | 21.66                                | 84.5                     | 51.0     | 46        | "                       |
| " 12 ...        | 1,850               | 1,056             | "        | ...   | 1.30                       | 24.05  | 18.81                                | 84.5                     | 51.9     | 57        | "                       |
| " 13 ...        | 2,600               | 1,052             | "        | ...   | 1.05                       | 27.30  | 19.95                                | 85.0                     | 51.0     | 51        | "                       |
| " 14 ...        | 1,300               | 1,057             | "        | 1.30  | 1.40                       | 18.20  | 15.39                                | 87.5                     | 67.4     | 46        | "                       |
| " 15 ...        | 1,100               | 1,054             | "        | 18.70   | 1.60                       | 17.60  | 8.55                                 | 87.0                     | 56.0     | 57        | "                       |
| " 16 ...        | 900                 | 1,057             | Trace.   | ...   | 1.75                       | 15.75  | 20.52                                | 85.5                     | 54.4     | 65        | "                       |
| " 17 ...        | 1,500               | 1,060             | Nil.     | 1.35  | 1.50                       | 20.52  | 6.84                                 | 87.5                     | 59.9     | 58        | "                       |
| " 18 ...        | 1,800               | 1,057             | "        | 1.80  | 1.50                       | 27.00  | 11.40                                | 87.0                     | 57.4     | 60        | "                       |
| " 19 ...        | 1,750               | 1,066             | "        | 57.70   | 1.65                       | 28.87  | 14.82                                | 86.5                     | 55.4     | 57        | "                       |
| " 20 ...        | 1,675               | 1,060             | "        | 83.75   | 1.70                       | 28.47  | 14.82                                | 86.5                     | 54.4     | 49        | "                       |
| " 21 ...        | 1,380               | 1,055             | "        | 23.46   | 1.35                       | 19.63  | 15.96                                | 86.5                     | 52.4     | 54        | "                       |
| " 22 ...        | 2,140               | 1,049             | "        | 23.54   | 0.95                       | 20.33  | 10.83                                | 88.0                     | 54.9     | 65        | "                       |
| " 23 ...        | 1,600               | 1,066             | "        | 27.20   | 1.20                       | 19.20  | 11.40                                | 90.0                     | 51.0     | 36        | "                       |
| " 24 ...        | 1,480               | 1,058             | "        | 16.28   | 1.35                       | 19.98  | 12.54                                | 90.0                     | 56.9     | 57        | "                       |
| " 25 ...        | 1,260               | 1,058             | "        | 13.86   | 1.40                       | 17.64  | 23.37                                | 92.0                     | 56.9     | 55        | "                       |
| " 26 ...        | 1,150               | 1,056             | "        | 37.95   | 1.43                       | 16.44  | 19.95                                | 93.0                     | 56.4     | 51        | "                       |
| " 27 ...        | 1,350               | 1,064             | "        | 22.95   | 1.80                       | 24.30  | 11.97                                | 92.0                     | 56.9     | 60        | "                       |
| " 28 ...        | 750                 | 1,066             | Trace.   | 8.25  | 2.00                       | 15.00  | 19.38                                | 91.5                     | 53.9     | 70        | "                       |
| " 29 ...        | 1,675               | 1,066             | Nil.     | 15.07   | 2.30                       | 38.52  | 11.97                                | 90.0                     | 55.4     | 63        | "                       |
| " 30 ...        | 1,690               | 1,060             | "        | 28.73   | 1.85                       | 31.26  | 14.82                                | 90.5                     | 54.9     | 60        | "                       |
| " 31 ...        | 1,820               | 1,066             | "        | 54.60   | 2.00                       | 36.40  | 22.80                                | 91.5                     | 53.9     | 61        | "                       |
| February 1 ...  | 1,575               | 1,063             | "        | 47.25   | 2.50                       | 39.37  | 22.80                                | 90.5                     | 53.4     | 57        | "                       |
| " 2 ...         | 1,900               | 1,062             | "        | 17.10   | 2.55                       | 48.45  | 19.95                                | 88.0                     | 51.5     | 50        | "                       |
| " 3 ...         | 2,075               | 1,066             | Trace.   | 22.82   | 2.60                       | 53.95  | 14.82                                | 87.5                     | 56.4     | 39        | "                       |
| " 4 ...         | 1,000               | 1,056             | Nil.     | 1.00  | 2.30                       | 23.00  | 22.80                                | 93.0                     | 65.9     | 60        | "                       |
| " 5 ...         | 2,000               | 1,060             | "        | 34.00   | 2.10                       | 42.00  | 14.82                                | 94.0                     | 67.4     | 83        | "                       |
| " 6 ...         | 1,720               | 1,063             | "        | 29.24   | 2.50                       | 43.00  | 23.37                                | 88.5                     | 63.9     | 85        | "                       |
| " 7 ...         | 1,700               | 1,056             | "        | 51.00   | 2.70                       | 45.90  | 23.37                                | 88.5                     | 65.9     | 63        | "                       |
| " 8 ...         | 2,300               | 1,056             | "        | 20.70   | 2.40                       | 55.20  | 22.80                                | 91.0                     | 58.9     | 67        | "                       |
| " 9 ...         | 2,620               | 1,052             | "        | 5.20  | 2.20                       | 57.64  | 13.11                                | 90.0                     | 57.4     | 54        | "                       |
| " 10 ...        | 1,940               | 1,054             | "        | 3.88  | 2.44                       | 47.33  | 22.80                                | 91.0                     | 57.4     | 57        | "                       |

| Date.    | Quantity collected. | Specific Gravity. | Albumen. | Total Hippuric Acid excreted in the Urine during 24 hours. Grammes. | Urea. Grammes per 100 c.c. | Total Urea excreted in the Urine during 24 hours. Grammes. | Water drunk during 24 hours. Litres. | TEMPERATURE IN SHADE. °F. |          | Humidity. | Hæmatozoa in the Blood. |         |
|----------|---------------------|-------------------|----------|---|----------------------------|--|--------------------------------------|---------------------------|----------|-----------|-------------------------|---------|
|          |                     |                   |          |   |                            |  |                                      | Maximum.                  | Minimum. |           |                         |         |
| 1894.    |                     |                   |          |   |                            |  |                                      |                           |          |           |                         |         |
| February | 11 ...              | 3,150             | 1,050    | Nil.  | 3.30                       | 1.95   | 61.42                                | 20.52                     | 92.5     | 59.9      | 55                      | Absent. |
| "        | 12 ...              | 1,800             | 1,053    | "   | 19.80                      | 2.60   | 46.80                                | 19.38                     | 94.5     | 58.9      | 49                      | "       |
| "        | 13 ...              | 1,690             | 1,052    | "   | 18.59                      | 2.30   | 38.87                                | 22.80                     | 94.5     | 58.9      | 48                      | "       |
| "        | 14 ...              | 1,140             | 1,052    | "   | 19.38                      | 2.50   | 28.50                                | 19.95                     | 94.0     | 57.9      | 52                      | "       |
| "        | 15 ...              | 2,100             | 1,044    | "   | 4.20                       | 2.30   | 48.30                                | 19.95                     | 94.0     | 58.9      | 47                      | "       |
| "        | 16 ...              | 1,390             | 1,052    | "   | 2.78                       | 2.50   | 34.75                                | 18.81                     | 92.5     | 56.9      | 55                      | "       |
| "        | 17 ...              | 2,025             | 1,052    | "   | 20.25                      | 2.80   | 56.70                                | 19.38                     | 93.0     | 56.9      | 44                      | "       |
| "        | 18 ...              | 2,275             | 1,050    | "   | ...                        | 2.90   | 65.97                                | 17.04                     | 95.5     | 56.9      | 39                      | "       |
| "        | 19 ...              | 2,540             | 1,051    | "   | ...                        | 2.95   | 74.93                                | 20.52                     | 91.5     | 53.9      | 50                      | "       |
| "        | 20 ...              | 2.290             | 1,050    | Trace.  | ...                        | 3.70   | 86.73                                | 19.95                     | 92.0     | 55.9      | 54                      | "       |
| "        | 21 ...              | 3.250             | 1,048    | Nil.  | ...                        | 4.20   | 136.50                               | 22.23                     | 94.0     | 57.9      | 44                      | "       |
| "        | 22 ...              | 2.450             | 1,046    | "   | ...                        | 4.20   | 102.90                               | 13.11                     | 94.0     | 55.9      | 55                      | "       |
| "        | 23 ...              | 3.700             | 1,046    | "   | ...                        | 3.80   | 140.60                               | 15.39                     | 92.5     | 56.9      | 51                      | "       |
| "        | 24 ...              | 4.000             | 1,048    | "   | ...                        | 3.70   | 148.00                               | 17.04                     | 93.0     | 58.9      | 50                      | "       |
| "        | 25 ...              | 2.260             | 1,052    | "   | ...                        | 4.60   | 103.96                               | 19.95                     | 95.0     | 58.4      | 47                      | "       |
| "        | 26 ...              | 3.050             | 1,050    | "   | ...                        | 3.80   | 113.90                               | 17.04                     | 94.5     | 59.4      | 44                      | "       |
| "        | 27 ...              | 2.500             | 1,052    | "   | ...                        | 4.00   | 100.00                               | 22.80                     | 95.5     | 60.4      | 53                      | "       |
| "        | 28 ...              | 2.790             | 1,055    | "   | 2.79                       | 3.80   | 105.81                               | 19.95                     | 97.5     | 59.9      | 54                      | "       |
| March    | 1 ...               | 2.600             | 1,048    | Trace.  | 3.00                       | 3.60   | 93.60                                | 21.09                     | 97.5     | 61.4      | 55                      | "       |
| "        | 2 ...               | 2,500             | 1,046    | Nil.  | ...                        | 3.60   | 90.00                                | 18.24                     | 99.5     | 60.9      | 62                      | "       |
| "        | 3 ...               | 2.660             | 1,053    | "   | ...                        | 4.60   | 122.36                               | 20.52                     | 100.0    | 63.4      | 56                      | "       |
| "        | 4 ...               | 2.525             | 1,052    | Trace.  | ...                        | 4.20   | 106.05                               | 22.80                     | 98.5     | 60.4      | 64                      | "       |
| "        | 5 ...               | 2.800             | 1,054    | "   | ...                        | 4.30   | 120.40                               | 19.38                     | 94.5     | 59.9      | 68                      | "       |
| "        | 6 ...               | 2.300             | 1,055    | Nil.  | ...                        | 3.80   | 87.40                                | 21.66                     | 94.0     | 60.9      | 75                      | "       |
| "        | 7 ...               | 2,490             | 1,056    | "   | 3.24                       | 3.40   | 84.66                                | 19.95                     | 91.5     | 54.4      | 60                      | "       |
| "        | 8 ...               | 2,510             | 1,054    | "   | ...                        | 3.15   | 79.06                                | 17.04                     | 96.0     | 54.4      | 55                      | "       |
| "        | 9 ...               | 2,500             | 1,055    | "   | 2.50                       | 3.00   | 75.00                                | 26.79                     | 97.5     | 59.4      | 35                      | "       |
| "        | 10 ...              | 2,290             | 1,058    | "   | 2.79                       | 3.10   | 70.99                                | 14.82                     | 98.0     | 57.4      | 47                      | "       |
| "        | 11 ...              | 2,150             | 1,056    | "   | 2.30                       | 2.80   | 60.20                                | 15.39                     | 98.0     | 53.9      | 37                      | "       |
| "        | 12 ...              | 3,025             | 1,050    | "   | 3.45                       | 2.70   | 81.67                                | 16.53                     | 97.0     | 58.4      | 38                      | "       |
| "        | 13 ...              | 2,700             | 1,048    | "   | 2.90                       | 2.40   | 64.80                                | 18.24                     | 100.0    | 60.9      | 27                      | "       |
| "        | 14 ...              | 2,390             | 1,048    | Trace.  | 2.78                       | 2.35   | 56.16                                | 14.82                     | 100.0    | 68.9      | 27                      | "       |
| "        | 15 ...              | 2,475             | 1,050    | "   | 2.47                       | 2.20   | 54.45                                | 22.23                     | 101.5    | 68.9      | 47                      | "       |
| "        | 16 ...              | 2,990             | 1,051    | "   | ...                        | 2.10   | 62.79                                | 19.95                     | 101.0    | 67.4      | 41                      | "       |
| "        | 17 ...              | 3,600             | 1,048    | Nil.  | 2.80                       | 1.92   | 69.12                                | 20.52                     | 99.0     | 66.4      | 60                      | "       |
| "        | 18 ...              | 3,500             | 1,050    | "   | ...                        | 2.40   | 84.00                                | 23.94                     | 97.5     | 68.9      | 53                      | "       |
| "        | 19 ...              | 2,900             | 1,050    | "   | ...                        | 2.24   | 64.96                                | 22.80                     | 99.5     | 71.4      | 53                      | "       |
| "        | 20 ...              | 3,600             | 1,050    | "   | ...                        | 1.90   | 68.40                                | 31.92                     | 96.5     | 72.4      | 45                      | "       |
| "        | 21 ...              | 4,310             | 1,042    | "   | ...                        | 1.60   | 68.96                                | 21.09                     | 87.5     | 73.4      | 56                      | "       |
| "        | 22 ...              | 3,570             | 1,050    | "   | ...                        | 2.50   | 89.25                                | 22.80                     | 94.5     | 69.4      | 58                      | "       |
| "        | 23 ...              | 2,510             | 1,052    | "   | ...                        | 2.65   | 66.51                                | 28.50                     | 99.5     | 68.4      | 43                      | "       |
| "        | 24 ...              | 2,980             | 1,055    | "   | ...                        | 2.40   | 51.52                                | 22.80                     | 99.0     | 67.4      | 34                      | "       |
| "        | 25 ...              | 4,170             | 1,044    | "   | ...                        | 1.75   | 74.32                                | 21.66                     | 103.5    | 65.4      | 29                      | "       |
| "        | 26 ...              | 3,520             | 1,045    | "   | ...                        | 2.00   | 70.40                                | 22.80                     | 103.0    | 60.9      | 29                      | "       |
| "        | 27 ...              | 3,600             | 1,044    | "   | ...                        | 2.00   | 72.00                                | 22.80                     | 103.0    | 63.9      | 31                      | "       |
| "        | 28 ...              | 4,100             | 1,045    | Trace.  | ...                        | 2.40   | 98.40                                | 21.09                     | 103.5    | 70.4      | 55                      | "       |
| "        | 29 ...              | 3,700             | 1,045    | Nil.  | ...                        | 2.70   | 99.90                                | 19.95                     | 97.5     | 68.4      | 57                      | "       |
| "        | 30 ...              | 4,560             | 1,040    | "   | ...                        | 2.25   | 100.32                               | 30.78                     | 94.0     | 68.4      | 54                      | "       |
| "        | 31 ...              | 6,280             | 1,041    | Trace.  | ...                        | 2.00   | 125.60                               | 20.52                     | 96.0     | 64.9      | 51                      | "       |
| April    | 1 ...               | 3,480             | 1,044    | "   | ...                        | 2.90   | 100.92                               | 23.37                     | 100.0    | 65.4      | 40                      | "       |
| "        | 2 ...               | 4,460             | 1,043    | Nil.  | ...                        | 2.70   | 120.42                               | 17.10                     | 100.5    | 62.4      | 32                      | "       |
| "        | 3 ...               | 4,050             | 1,044    | "   | ...                        | 2.90   | 117.45                               | 22.23                     | 98.0     | 62.4      | 22                      | "       |
| "        | 4 ...               | 3,950             | 1,042    | "   | Nil.                       | 2.60   | 102.70                               | 23.37                     | 100.0    | 64.4      | 40                      | "       |
| "        | 5 ...               | 2,800             | 1,051    | "   | "                          | 2.90   | 81.20                                | 29.14                     | 102.5    | 74.8      | 63                      | "       |
| "        | 6 ...               | 4,900             | 1,045    | "   | "                          | 2.50   | 122.50                               | 28.50                     | 104.0    | 74.3      | 66                      | "       |
| "        | 7 ...               | 6,880             | 1,037    | "   | "                          | 1.85   | 133.21                               | 19.38                     | 97.0     | 68.9      | 27                      | "       |
| "        | 8 ...               | 5,070             | 1,064    | "   | "                          | 2.20   | 111.54                               | 18.24                     | 94.0     | 62.9      | 36                      | "       |
| "        | 9 ...               | 4,800             | 1,048    | "   | "                          | 2.90   | 139.20                               | 22.80                     | 99.0     | 62.9      | 27                      | "       |
| "        | 10 ...              | 3,920             | 1,046    | "   | "                          | 2.80   | 109.76                               | 22.80                     | 101.0    | 65.4      | 52                      | "       |
| "        | 11 ...              | 4,600             | 1,045    | "   | 3.90                       | 2.60   | 119.60                               | 18.24                     | 103.0    | 64.4      | 43                      | "       |
| "        | 12 ...              | 4,250             | 1,040    | "   | 3.75                       | 2.60   | 110.50                               | 14.82                     | 104.5    | 71.4      | 30                      | "       |
| "        | 13 ...              | 3,810             | 1,052    | "   | 41.91                      | 3.00   | 114.30                               | 12.54                     | 100.5    | 70.4      | 30                      | "       |
| "        | 14 ...              | 4,280             | 1,042    | "   | ...                        | 2.40   | 102.72                               | 15.39                     | 100.5    | 67.9      | 58                      | "       |
| "        | 15 ...              | 5,010             | 1,043    | "   | 5.01                       | 2.35   | 117.73                               | 12.54                     | 100.0    | 70.4      | 29                      | "       |
| "        | 16 ...              | 5,050             | 1,046    | "   | 5.60                       | 2.60   | 131.30                               | 14.82                     | 101.5    | 66.4      | 28                      | "       |
| "        | 17 ...              | 3,500             | 1,048    | "   | 4.00                       | 2.40   | 84.00                                | 20.52                     | 100.5    | 68.9      | 36                      | "       |
| "        | 18 ...              | 3,480             | 1,046    | "   | 3.70                       | 2.34   | 81.43                                | 7.41                      | 102.0    | 67.9      | 29                      | "       |
| "        | 19 ...              | 4,160             | 1,043    | "   | 4.30                       | 2.10   | 87.36                                | 13.11                     | 104.5    | 71.9      | 37                      | "       |
| "        | 20 ...              | 4,680             | 1,037    | "   | 4.68                       | 1.65   | 77.20                                | 15.96                     | 103.5    | 73.4      | 50                      | "       |
| "        | 21 ...              | 3,600             | 1,048    | "   | 3.85                       | 2.50   | 90.00                                | 19.38                     | 105.5    | 70.9      | 69                      | "       |
| "        | 22 ...              | 3,350             | 1,052    | "   | 3.50                       | 2.80   | 93.80                                | 19.95                     | 104.5    | 73.8      | 48                      | "       |
| "        | 23 ...              | 2,800             | 1,051    | "   | 25.20                      | 2.80   | 78.40                                | 9.69                      | 105.0    | 75.8      | 44                      | "       |
| "        | 24 ...              | 2,550             | 1,053    | "   | 2.94                       | 3.15   | 80.32                                | 14.25                     | 106.5    | 71.9      | 21                      | "       |
| "        | 25 ...              | 3,100             | 1,048    | "   | 3.65                       | 3.10   | 96.10                                | 9.12                      | 107.5    | 68.9      | 23                      | "       |
| "        | 26 ...              | 3,380             | 1,038    | "   | ...                        | 1.80   | 60.84                                | 10.83                     | 105.0    | 70.9      | 58                      | "       |
| "        | 27 ...              | 3,570             | 1,045    | "   | 3.57                       | 2.50   | 89.25                                | 10.83                     | 103.0    | 69.9      | 61                      | "       |
| "        | 28 ...              | 3,000             | 1,049    | "   | 3.45                       | 3.10   | 102.00                               | 18.81                     | 101.5    | 67.4      | 55                      | "       |
| "        | 29 ...              | 3,760             | 1,047    | "   | ...                        | 2.80   | 105.28                               | 11.97                     | 97.5     | 63.9      | 55                      | "       |
| "        | 30 ...              | 3,600             | 1,041    | "   | ...                        | 2.20   | 79.20                                | 7.98                      | 98.5     | 68.9      | 56                      | "       |
| May      | 1 ...               | 3,720             | 1,050    | "   | 3.72                       | 2.90   | 107.88                               | 9.12                      | 98.5     | 70.9      | 56                      | "       |
| "        | 2 ...               | 3,700             | 1,044    | "   | ...                        | 2.24   | 82.88                                | 10.26                     | 98.0     | 70.9      | 56                      | "       |
| "        | 3 ...               | 2,300             | 1,051    | "   | 13.80                      | 3.00   | 69.00                                | 25.08                     | 104.0    | 70.9      | 42                      | "       |
| "        | 4 ...               | 4,450             | 1,042    | "   | Nil.                       | 2.00   | 89.00                                | 14.25                     | 104.0    | 71.4      | 35                      | "       |
| "        | 5 ...               | 4,500             | 1,037    | "   | "                          | 1.26   | 56.70                                | 7.98                      | 104.5    | 70.9      | 42                      | "       |
| "        | 6 ...               | 4,020             | 1,039    | "   | "                          | 1.90   | 76.38                                | 14.82                     | 104.0    | 70.9      | 59                      | "       |
| "        | 7 ...               | 4,080             | 1,045    | "   | "                          | 2.52   | 102.81                               | 14.82                     | 100.0    | 69.4      | 58                      | "       |



| Date.  | Quantity collected. | Specific Gravity. | Albumen. | Total Hippuric Acid excreted in the Urine during 24 hours. Grammes. | Urea. Grammes per 100 c.c. | Total Urea excreted in the Urine during 24 hours. Grammes. | Water drunk during 24 hours. Litres. | TEMPERATURE IN SHADE °F. |          | Humidity. | Hæmatozoa in the Blood. |         |
|--------|---------------------|-------------------|----------|---|----------------------------|--|--------------------------------------|--------------------------|----------|-----------|-------------------------|---------|
|        |                     |                   |          |   |                            |  |                                      | Maximum.                 | Minimum. |           |                         |         |
| 1894.  |                     |                   |          |   |                            |  |                                      |                          |          |           |                         |         |
| May    | 8 ...               | 5,030             | 1,040    | Nil.  | Nil.                       | 1.90   | 95.57                                | 14.82                    | 97.5     | 69.4      | 50                      | Absent. |
| "      | 9 ...               | 6,350             | 1,033    | "   | "                          | 1.32   | 83.82                                | 16.53                    | 98.0     | 68.4      | 56                      |         |
| "      | 10 ...              | 3,700             | 1,042    | "   | "                          | 1.80   | 66.80                                | 6.84                     | 98.0     | 69.9      | 63                      |         |
| "      | 11 ...              | 6,040             | 1,040    | "   | "                          | 1.90   | 114.76                               | 14.82                    | 100.5    | 69.4      | 50                      |         |
| "      | 12 ...              | 4,600             | 1,040    | "   | "                          | 2.00   | 92.00                                | 15.96                    | 99.5     | 6.9       | 41                      |         |
| "      | 13 ...              | 4,100             | 1,040    | "   | "                          | 2.20   | 90.0                                 | 11.97                    | 100.0    | 69.9      | 45                      |         |
| "      | 14 ...              | 4,350             | 1,041    | "   | "                          | 1.90   | 82.65                                | 16.53                    | 98.5     | 72.9      | 56                      |         |
| "      | 15 ...              | 6,600             | 1,039    | "   | "                          | 1.80   | 118.80                               | 11.97                    | 97.0     | 70.9      | 57                      |         |
| "      | 16 ...              | 4,700             | 1,038    | "   | "                          | 1.90   | 89.30                                | 11.97                    | 96.0     | 67.4      | 58                      |         |
| "      | 17 ...              | 4,610             | 1,040    | "   | "                          | 2.00   | 92.20                                | 7.41                     | 95.5     | 70.9      | 59                      |         |
| "      | 18 ...              | 3,280             | 1,037    | "   | "                          | 2.30   | 75.44                                | 9.12                     | 97.5     | 72.4      | 65                      |         |
| "      | 19 ...              | 4,890             | 1,038    | "   | "                          | 2.30   | 112.47                               | 8.55                     | 99.0     | 70.4      | 63                      |         |
| "      | 20 ...              | 4,800             | 1,037    | "   | "                          | 2.00   | 96.00                                | 13.68                    | 97.0     | 72.4      | 58                      |         |
| "      | 21 ...              | 3,290             | 1,041    | "   | "                          | 2.50   | 82.25                                | 5.13                     | 97.0     | 69.9      | 56                      |         |
| "      | 22 ...              | 4,280             | 1,038    | "   | "                          | 2.50   | 107.00                               | 10.26                    | 98.5     | 72.4      | 57                      |         |
| "      | 23 ...              | 2,800             | 1,038    | "   | "                          | 2.70   | 75.60                                | 22.23                    | 101.1    | 73.8      | 66                      |         |
| "      | 24 ...              | 3,590             | 1,041    | "   | "                          | 2.95   | 108.90                               | 10.83                    | 101.0    | 75.3      | 62                      |         |
| "      | 25 ...              | 4,450             | 1,037    | "   | "                          | 2.20   | 97.90                                | 16.53                    | 101.5    | 72.9      | 60                      |         |
| "      | 26 ...              | 5,800             | 1,024    | "   | "                          | 1.00   | 58.00                                | 12.54                    | 99.5     | 72.4      | 59                      |         |
| "      | 27 ...              | 8,250             | 1,023    | "   | "                          | 1.10   | 90.75                                | 12.54                    | 100.5    | 70.4      | 56                      |         |
| "      | 28 ...              | 7,000             | 1,031    | "   | 6.50                       | 1.40   | 98.00                                | 8.55                     | 100.0    | 71.9      | 58                      |         |
| "      | 29 ...              | 3,850             | 1,045    | "   | Nil.                       | 2.70   | 103.95                               | 12.54                    | 98.5     | 70.9      | 57                      |         |
| "      | 30 ...              | 2,470             | 1,033    | "   | "                          | 1.90   | 46.93                                | 13.68                    | 102.5    | 71.9      | 60                      |         |
| "      | 31 ...              | 3,850             | 1,043    | "   | "                          | 2.30   | 88.55                                | 13.11                    | 100.0    | 74.3      | 61                      |         |
| June   | 1 ...               | 4,670             | 1,040    | "   | "                          | 2.30   | 107.41                               | 19.38                    | 99.5     | 75.3      | 61                      |         |
| "      | 2 ...               | 5,560             | 1,037    | "   | "                          | 1.70   | 94.52                                | 15.39                    | 96.5     | 74.8      | 59                      |         |
| "      | 3 ...               | 4,000             | 1,044    | "   | "                          | 2.50   | 100.00                               | 11.97                    | 96.0     | 74.8      | 61                      |         |
| "      | 4 ...               | 4,500             | 1,029    | "   | "                          | 2.04   | 91.00                                | 20.52                    | 97.5     | 73.8      | 60                      |         |
| "      | 5 ...               | 4,990             | 1,040    | "   | "                          | 1.75   | 87.32                                | 11.36                    | 97.0     | 72.9      | 63                      |         |
| "      | 6 ...               | 3,445             | 1,039    | "   | "                          | 1.56   | 53.74                                | 19.38                    | 96.5     | 73.8      | 69                      |         |
| "      | 7 ...               | 6,375             | 1,033    | "   | "                          | 1.18   | 75.22                                | 7.41                     | 96.0     | 72.4      | 67                      |         |
| "      | 8 ...               | 5,850             | 1,040    | "   | "                          | 1.80   | 105.30                               | 9.12                     | 90.0     | 72.4      | 86                      |         |
| "      | 9 ...               | 5,370             | 1,036    | "   | "                          | 1.36   | 74.03                                | 13.11                    | 89.5     | 73.8      | 72                      |         |
| "      | 10 ...              | 4,960             | 1,039    | "   | "                          | 1.34   | 66.46                                | 16.53                    | 90.5     | 72.9      | 93                      |         |
| "      | 11 ...              | 4,030             | 1,042    | "   | "                          | 1.68   | 67.70                                | 13.11                    | 83.6     | 68.9      | 74                      |         |
| "      | 12 ...              | 4,080             | 1,042    | "   | "                          | 1.85   | 75.48                                | 9.69                     | 84.5     | 71.4      | 72                      |         |
| "      | 13 ...              | 4,820             | 1,040    | "   | "                          | 1.70   | 81.94                                | 1.71                     | 83.6     | 70.4      | 90                      |         |
| "      | 14 ...              | 5,000             | 1,046    | "   | "                          | 1.80   | 90.00                                | 7.98                     | 86.0     | 70.4      | 93                      |         |
| "      | 15 ...              | 4,580             | 1,045    | "   | "                          | 1.80   | 82.44                                | 2.28                     | 80.5     | 72.9      | 84                      |         |
| "      | 16 ...              | 3,845             | 1,043    | "   | "                          | 2.5  | 78.00                                | 6.27                     | 86.5     | 72.4      | 84                      |         |
| "      | 17 ...              | 6,620             | 1,034    | "   | "                          | 1.25   | 82.75                                | 6.84                     | 80.1     | 71.4      | 84                      |         |
| "      | 18 ...              | 4,680             | 1,044    | "   | "                          | 1.95   | 91.26                                | 7.98                     | 86.0     | 72.4      | 67                      |         |
| "      | 19 ...              | 5,100             | 1,046    | "   | "                          | 2.55   | 130.05                               | 5.13                     | 90.0     | 72.9      | 69                      |         |
| "      | 20 ...              | 4,050             | 1,036    | "   | "                          | 1.85   | 74.92                                | 13.68                    | 90.0     | 73.8      | 70                      |         |
| "      | 21 ...              | 5,555             | 1,033    | "   | "                          | 2.00   | 111.10                               | 13.11                    | 87.5     | 73.4      | 66                      |         |
| "      | 22 ...              | 3,800             | 1,029    | "   | "                          | 1.60   | 60.80                                | 10.83                    | 87.5     | 71.4      | 74                      |         |
| "      | 23 ...              | 4,990             | 1,037    | "   | "                          | 1.95   | 97.30                                | 15.96                    | 82.6     | 72.4      | 65                      |         |
| "      | 24 ...              | 4,700             | 1,031    | "   | "                          | 1.40   | 65.80                                | 13.68                    | 89.5     | 71.9      | 78                      |         |
| "      | 25 ...              | 5,100             | 1,036    | "   | "                          | 1.65   | 84.15                                | 14.82                    | 88.0     | 70.9      | 79                      |         |
| "      | 26 ...              | 4,575             | 1,031    | "   | "                          | 1.70   | 77.77                                | 13.11                    | 85.0     | 71.9      | 65                      |         |
| "      | 27 ...              | 4,610             | 1,033    | "   | "                          | 1.70   | 78.37                                | 10.83                    | 86.5     | 72.4      | 70                      |         |
| "      | 28 ...              | 5,810             | 1,034    | "   | "                          | 1.40   | 81.34                                | 11.40                    | 88.0     | 70.9      | 88                      |         |
| "      | 29 ...              | 6,080             | 1,036    | "   | "                          | 1.70   | 103.36                               | 22.80                    | 89.0     | 70.9      | 70                      |         |
| "      | 30 ...              | 9,300             | 1,023    | "   | "                          | 1.10   | 102.30                               | 9.12                     | 84.5     | 72.4      | 82                      |         |
| July   | 1 ...               | 7,280             | 1,025    | "   | "                          | 1.23   | 89.54                                | 14.25                    | 88.0     | 71.9      | 64                      |         |
| "      | 2 ...               | 5,340             | 1,036    | "   | "                          | 1.65   | 88.11                                | 14.82                    | 86.0     | 70.9      | 76                      |         |
| "      | 3 ...               | 5,080             | 1,042    | "   | "                          | 1.55   | 78.74                                | 13.68                    | 86.5     | 70.9      | 93                      |         |
| "      | 4 ...               | 8,200             | 1,020    | "   | "                          | 0.45   | 36.90                                | 13.68                    | 84.5     | 70.9      | 82                      |         |
| "      | 5 ...               | 3,900             | 1,032    | "   | "                          | 1.00   | 39.00                                | 2.85                     | 86.0     | 71.4      | 81                      |         |
| "      | 6 ...               | 7,400             | 1,030    | "   | "                          | 0.96   | 71.04                                | 2.85                     | 87.5     | 70.9      | 82                      |         |
| "      | 7 ...               | 5,900             | 1,032    | "   | "                          | 1.08   | 63.72                                | 1.14                     | 82.6     | 70.9      | 80                      |         |
| "      | 8 ...               | 3,500             | 1,043    | "   | "                          | 1.60   | 56.00                                | 4.56                     | 87.5     | 70.4      | 82                      |         |
| "      | 9 ...               | 5,620             | 1,032    | "   | "                          | 1.10   | 61.82                                | 14.82                    | 81.0     | 70.4      | 90                      |         |
| "      | 10 ...              | 8,280             | 1,030    | "   | "                          | 0.85   | 72.12                                | 6.27                     | 77.6     | 69.4      | 97                      |         |
| "      | 11 ...              | 3,410             | 1,030    | "   | "                          | 0.90   | 30.69                                | 8.55                     | 72.2     | 69.9      | 93                      |         |
| "      | 12 ...              | 6,250             | 1,037    | "   | "                          | 1.25   | 78.12                                | 9.69                     | 75.5     | 68.4      | 93                      |         |
| "      | 13 ...              | 4,930             | 1,027    | "   | "                          | 1.02   | 50.28                                | 13.11                    | 78.1     | 68.9      | 86                      |         |
| "      | 14 ...              | 9,860             | 1,022    | "   | "                          | 0.80   | 78.88                                | 11.40                    | 82.1     | 70.9      | 86                      |         |
| "      | 15 ...              | 6,300             | 1,032    | "   | "                          | 1.16   | 73.08                                | 10.83                    | 78.5     | 68.9      | 93                      |         |
| "      | 16 ...              | 9,910             | 1,032    | "   | "                          | 1.05   | 104.05                               | 14.25                    | 77.6     | 69.9      | 93                      |         |
| "      | 17 ...              | 5,600             | 1,030    | "   | "                          | 1.20   | 67.20                                | 9.09                     | 82.6     | 71.4      | 86                      |         |
| "      | 18 ...              | 4,500             | 1,039    | "   | "                          | 1.52   | 68.40                                | 22.23                    | 85.5     | 70.9      | 80                      |         |
| "      | 19 ...              | 5,630             | 1,044    | "   | 28.15                      | 1.60   | 90.03                                | 17.10                    | 83.1     | 69.9      | 90                      |         |
| "      | 20 ...              | 5,410             | 1,033    | "   | ...                        | 1.26   | 68.16                                | 17.10                    | ...      | ...       | ...                     |         |
| "      | 21 ...              | 8,700             | 1,039    | "   | ...                        | 1.40   | 121.80                               | 12.54                    | 77.6     | 70.9      | 93                      |         |
| "      | 22 ...              | 4,450             | 1,041    | "   | 13.35                      | 1.50   | 66.75                                | 11.97                    | 78.6     | 70.9      | 84                      |         |
| "      | 23 ...              | 9,420             | 1,038    | "   | ...                        | 1.20   | 113.04                               | 20.50                    | 78.1     | 70.4      | 86                      |         |
| "      | 24 ...              | 6,610             | 1,032    | "   | ...                        | 1.00   | 66.10                                | 6.27                     | 80.5     | 69.4      | 83                      |         |
| "      | 25 ...              | 6,700             | 1,036    | "   | Nil.                       | 1.40   | 93.80                                | 14.82                    | 80.6     | 70.4      | 77                      |         |
| "      | 26 ...              | 8,550             | 1,031    | "   | "                          | 0.95   | 81.22                                | 16.53                    | 83.6     | 69.4      | 84                      |         |
| "      | 27 ...              | 10,200            | 1,028    | "   | "                          | 0.80   | 81.60                                | 10.26                    | 85.0     | 69.9      | 73                      |         |
| "      | 28 ...              | 9,600             | 1,029    | "   | "                          | 0.90   | 86.40                                | 15.39                    | 84.5     | 69.9      | 75                      |         |
| "      | 29 ...              | 10,070            | 1,024    | "   | "                          | 0.80   | 80.56                                | 6.84                     | 85.5     | 68.9      | 73                      |         |
| "      | 30 ...              | 6,180             | 1,040    | "   | 5.50                       | 1.60   | 98.88                                | 14.82                    | 85.5     | 70.4      | 86                      |         |
| "      | 31 ...              | 5,000             | 1,032    | "   | Nil.                       | 1.35   | 67.50                                | 14.82                    | 84.5     | 70.9      | 76                      |         |
| August | 1 ...               | 7,150             | 1,040    | "   | "                          | 1.76   | 125.84                               | 17.67                    | 82.6     | 70.4      | 84                      |         |
| "      | 2 ...               | 6,790             | 1,030    | "   | "                          | 1.20   | 81.48                                | 14.82                    | 82.1     | 70.9      | 86                      |         |



| Date.     |        | Quantity collected. | Specific Gravity. | Albumen. | Total Hippuric Acid excreted in the urine during 24 hours. Grammes. | Urea. Grammes per 100 c.c. | Total Urea excreted in the Urine during 24 hours. Grammes. | Water drunk during 24 hours. Litres. | TEMPERATURE IN SHADE °F. |          | Humidity. | Hæmatozoa in Blood. |
|-----------|--------|---------------------|-------------------|----------|---|----------------------------|--|--------------------------------------|--------------------------|----------|-----------|---------------------|
|           |        |                     |                   |          |   |                            |  |                                      | Maximum.                 | Minimum. |           |                     |
| 1894.     |        |                     |                   |          |   |                            |  |                                      |                          |          |           |                     |
| August    | 3 ...  | 7,580               | 1,032             | Nil.     | Nil.  | 1.32                       | 101.05   | 15.39                                | 84.5                     | 70.4     | 86        | Absent.             |
| "         | 4 ...  | 8,825               | 1,026             | "        | "   | 1.00                       | 88.25  | 22.23                                | 85.0                     | 70.4     | 84        | "                   |
| "         | 5 ...  | 8,840               | 1,030             | "        | "   | 1.00                       | 88.40  | 15.96                                | 84.5                     | 70.9     | 86        | "                   |
| "         | 6 ...  | 7,120               | 1,032             | "        | "   | 1.45                       | 103.24   | 10.83                                | ...                      | ...      | ...       | "                   |
| "         | 7 ...  | 9,050               | 1,028             | "        | "   | 1.55                       | 140.27   | 17.67                                | 84.0                     | 70.4     | 80        | "                   |
| "         | 8 ...  | 4,840               | 1,038             | "        | "   | 1.60                       | 77.40  | 18.81                                | 86.0                     | 70.9     | 80        | "                   |
| "         | 9 ...  | 6,300               | 1,031             | "        | "   | 1.20                       | 75.60  | 18.24                                | 83.6                     | 70.9     | 84        | "                   |
| "         | 10 ... | 5,150               | 1,028             | "        | "   | 0.80                       | 41.20  | 17.10                                | 85.5                     | 70.4     | 81        | "                   |
| "         | 11 ... | 7,900               | 1,036             | "        | "   | 1.25                       | 98.75  | 17.67                                | 84.0                     | 69.9     | 88        | "                   |
| "         | 12 ... | 7,560               | 1,030             | "        | "   | 1.12                       | 84.67  | 15.39                                | 80.6                     | 70.4     | 88        | "                   |
| "         | 13 ... | 7,810               | 1,027             | "        | "   | 1.20                       | 93.72  | 17.67                                | 81.1                     | 70.9     | 88        | "                   |
| "         | 14 ... | 6,500               | 1,038             | "        | "   | 1.85                       | 120.25   | 15.96                                | 83.6                     | 69.4     | 75        | "                   |
| "         | 15 ... | 5,150               | 1,035             | "        | "   | 1.90                       | 97.85  | 21.09                                | 83.1                     | 70.4     | 83        | "                   |
| "         | 16 ... | 8,300               | 1,040             | "        | 7.50  | 2.35                       | 197.05   | 8.55                                 | 82.1                     | 70.4     | 84        | "                   |
| "         | 17 ... | 7,300               | 1,031             | "        | Nil.  | 2.00                       | 146.00   | 17.67                                | 75.6                     | 69.4     | 93        | "                   |
| "         | 18 ... | 6,020               | 1,033             | "        | 5.60  | 2.15                       | 129.43   | 20.52                                | 80.1                     | 68.9     | 88        | "                   |
| "         | 19 ... | 6,020               | 1,032             | "        | 5.00  | 1.80                       | 108.36   | 12.54                                | 77.6                     | 69.9     | 84        | "                   |
| "         | 20 ... | 4,600               | 1,037             | "        | 4.50  | 2.90                       | 133.40   | 9.69                                 | 82.1                     | 70.4     | 84        | "                   |
| "         | 21 ... | 9,780               | 1,032             | "        | 8.64  | 2.20                       | 215.16   | 17.67                                | 84.0                     | 68.4     | 86        | "                   |
| "         | 22 ... | 5,150               | 1,040             | "        | 5.30  | 2.10                       | 108.15   | 17.10                                | 83.1                     | 68.9     | 83        | "                   |
| "         | 23 ... | 4,890               | 1,052             | "        | 4.60  | 2.50                       | 122.25   | 18.81                                | 84.5                     | 67.9     | 73        | "                   |
| "         | 24 ... | 6,520               | 1,040             | "        | 5.75  | 1.67                       | 108.88   | 18.81                                | 85.0                     | 68.9     | 75        | "                   |
| "         | 25 ... | 2,300               | 1,052             | "        | ...   | 2.35                       | 54.05  | 23.37                                | 84.5                     | 67.4     | 75        | "                   |
| "         | 26 ... | 5,240               | 1,045             | "        | 5.24  | 1.98                       | 103.75   | 20.52                                | 87.0                     | 68.9     | 75        | "                   |
| "         | 27 ... | 7,620               | 1,025             | "        | ...   | 1.00                       | 76.20  | 13.68                                | 85.5                     | 67.9     | 81        | "                   |
| "         | 28 ... | 5,690               | 1,035             | "        | ...   | 1.80                       | 102.42   | 22.80                                | 85.5                     | 66.9     | 81        | "                   |
| "         | 29 ... | 7,880               | 1,030             | "        | Nil.  | 1.80                       | 86.68  | 18.81                                | 82.6                     | 68.9     | 81        | "                   |
| "         | 30 ... | 6,100               | 1,030             | "        | "   | 1.80                       | 109.80   | 25.08                                | 85.5                     | 70.4     | 83        | "                   |
| "         | 31 ... | 6,300               | 1,030             | "        | "   | 1.12                       | 70.56  | 24.51                                | 87.0                     | 69.4     | 77        | "                   |
| September | 1 ...  | 5,730               | 1,030             | "        | "   | 1.06                       | 60.73  | 22.80                                | 83.1                     | 67.4     | 75        | "                   |
| "         | 2 ...  | 6,750               | 1,031             | "        | "   | 1.15                       | 77.62  | 20.52                                | 86.5                     | 68.9     | 79        | "                   |
| "         | 3 ...  | 5,600               | 1,032             | "        | "   | 1.32                       | 73.92  | 16.53                                | 84.5                     | 69.4     | 77        | "                   |
| "         | 4 ...  | 6,800               | 1,031             | "        | "   | 1.35                       | 91.80  | 17.10                                | ...                      | ...      | ...       | "                   |
| "         | 5 ...  | 6,570               | 1,036             | "        | "   | 1.50                       | 98.55  | 18.81                                | 84.0                     | 69.4     | 82        | "                   |
| "         | 6 ...  | 5,970               | 1,032             | "        | "   | 1.60                       | 95.52  | 25.08                                | 84.5                     | 69.4     | 84        | "                   |
| "         | 7 ...  | 2,280               | 1,047             | "        | "   | 2.20                       | 50.16  | 29.64                                | 85.0                     | 69.9     | 88        | "                   |
| "         | 8 ...  | 7,210               | 1,032             | "        | "   | 1.30                       | 93.73  | 20.52                                | 81.1                     | 69.9     | 95        | "                   |
| "         | 9 ...  | 6,250               | 1,028             | "        | "   | 1.20                       | 75.00  | 17.10                                | 79.6                     | 69.4     | 95        | "                   |
| "         | 10 ... | 6,120               | 1,036             | "        | "   | 1.45                       | 88.74  | 37.05                                | 78.6                     | 69.4     | 90        | "                   |
| "         | 11 ... | 6,700               | 1,032             | "        | "   | 1.18                       | 79.06  | 22.23                                | 80.6                     | 68.4     | 83        | "                   |
| "         | 12 ... | 5,300               | 1,041             | "        | "   | 1.70                       | 90.10  | 21.09                                | 78.6                     | 67.4     | 81        | "                   |
| "         | 13 ... | 6,460               | 1,034             | "        | "   | 1.30                       | 83.98  | 18.81                                | 82.6                     | 67.9     | 84        | "                   |
| "         | 14 ... | 6,450               | 1,032             | "        | "   | 1.30                       | 83.85  | 24.51                                | 83.1                     | 68.4     | 84        | "                   |
| "         | 15 ... | 5,430               | 1,030             | "        | "   | 0.90                       | 48.87  | 23.37                                | 84.0                     | 68.9     | 93        | "                   |
| "         | 16 ... | 6,180               | 1,025             | "        | "   | 0.85                       | 52.53  | 10.83                                | 79.6                     | 69.4     | 84        | "                   |
| "         | 17 ... | 6,610               | 1,033             | "        | "   | 1.50                       | 99.15  | 19.38                                | 84.0                     | 69.9     | 81        | "                   |
| "         | 18 ... | 6,350               | 1,026             | "        | "   | 1.15                       | 73.02  | 25.65                                | 84.0                     | 70.4     | 77        | "                   |
| "         | 19 ... | 6,330               | 1,026             | "        | "   | 1.20                       | 75.96  | 20.52                                | 85.0                     | 69.9     | 83        | "                   |
| "         | 20 ... | 6,120               | 1,036             | "        | "   | 1.32                       | 80.78  | 15.39                                | 82.1                     | 69.4     | 81        | "                   |
| "         | 21 ... | 5,600               | 1,030             | "        | "   | 1.22                       | 68.32  | 26.79                                | 87.5                     | 69.4     | 86        | "                   |
| "         | 22 ... | 7,110               | 1,032             | Nil.     | Nil.  | 1.45                       | 103.09   | 29.07                                | 84.5                     | 66.9     | 75        | "                   |
| "         | 23 ... | 6,100               | 1,027             | "        | "   | 1.10                       | 67.10  | 22.23                                | 86.5                     | 65.4     | 79        | "                   |
| "         | 24 ... | 6,280               | 1,025             | "        | "   | 1.08                       | 67.82  | 26.79                                | 86.5                     | 65.4     | 77        | "                   |
| "         | 25 ... | 7,810               | 1,029             | "        | "   | 1.20                       | 93.72  | 15.39                                | 85.5                     | 67.4     | 77        | "                   |
| "         | 26 ... | 6,700               | 1,028             | "        | "   | 1.00                       | 67.00  | 21.09                                | 87.0                     | 69.4     | 90        | "                   |
| "         | 27 ... | 6,920               | 1,036             | "        | "   | 1.35                       | 93.42  | 20.52                                | 87.0                     | 68.9     | 82        | "                   |
| "         | 28 ... | 6,400               | 1,033             | "        | "   | 1.45                       | 92.80  | 15.39                                | 84.5                     | 68.9     | 84        | "                   |
| "         | 29 ... | 7,050               | 1,032             | "        | "   | 1.35                       | 95.17  | 27.36                                | 85.5                     | 68.4     | 77        | "                   |
| "         | 30 ... | 9,400               | 1,028             | "        | "   | 1.00                       | 94.00  | 30.21                                | 85.5                     | 67.9     | 75        | "                   |
| October   | 1 ...  | 11,400              | 1,033             | "        | "   | 1.90                       | 102.60   | 21.09                                | 84.0                     | 65.4     | 77        | "                   |
| "         | 2 ...  | 8,130               | 1,030             | "        | "   | 1.25                       | 101.62   | 22.80                                | 85.5                     | 65.9     | 86        | "                   |
| "         | 3 ...  | 7,980               | 1,029             | "        | "   | 1.25                       | 99.75  | 31.66                                | 83.6                     | 63.9     | 81        | "                   |
| "         | 4 ...  | 6,620               | 1,033             | "        | "   | 1.60                       | 105.92   | 25.08                                | 86.5                     | 63.9     | 81        | "                   |
| "         | 5 ...  | 8,100               | 1,030             | "        | "   | 1.15                       | 93.15  | 26.79                                | 87.0                     | 61.4     | 78        | "                   |
| "         | 6 ...  | 5,220               | 1,034             | "        | "   | 1.40                       | 73.08  | 21.09                                | 87.5                     | 61.4     | 79        | "                   |
| "         | 7 ...  | 7,000               | 1,030             | "        | "   | 1.10                       | 77.00  | 27.93                                | 91.5                     | 68.9     | 73        | "                   |
| "         | 8 ...  | 8,270               | 1,030             | "        | "   | 1.05                       | 86.83  | 26.22                                | 90.0                     | 67.4     | 77        | "                   |
| "         | 9 ...  | 7,210               | 1,058             | "        | "   | 1.25                       | 90.12  | 20.52                                | 91.5                     | 68.4     | 78        | "                   |
| "         | 10 ... | 7,010               | 1,028             | "        | "   | 1.35                       | 94.63  | 26.22                                | 89.5                     | 68.4     | 78        | "                   |
| "         | 11 ... | 6,520               | 1,028             | "        | "   | 1.37                       | 89.32  | 21.09                                | 92.0                     | 71.4     | 80        | "                   |
| "         | 12 ... | 8,450               | 1,036             | "        | "   | 1.70                       | 143.65   | 34.77                                | 91.0                     | 69.9     | 70        | "                   |
| "         | 13 ... | 7,250               | 1,030             | "        | "   | 1.20                       | 87.00  | 21.66                                | 92.5                     | 67.4     | 84        | "                   |
| "         | 14 ... | 7,000               | 1,033             | "        | "   | 1.40                       | 98.00  | 34.77                                | 87.5                     | 69.4     | 88        | "                   |
| "         | 15 ... | 9,260               | 1,030             | "        | "   | 1.00                       | 92.60  | 29.07                                | 85.0                     | 70.4     | 90        | "                   |
| "         | 16 ... | 8,810               | 1,031             | "        | "   | 1.20                       | 105.72   | 22.80                                | 90.0                     | 69.4     | 66        | "                   |
| "         | 17 ... | 10,710              | 1,034             | "        | "   | 1.35                       | 114.58   | 34.63                                | 90.0                     | 65.9     | 76        | "                   |
| "         | 18 ... | 8,310               | 1,032             | "        | "   | 1.30                       | 108.03   | 21.09                                | 88.0                     | 70.9     | 81        | "                   |
| "         | 19 ... | 7,480               | 1,038             | "        | "   | 1.40                       | 104.72   | 16.53                                | 90.5                     | 70.4     | 83        | "                   |
| "         | 20 ... | 5,250               | 1,035             | Trace.   | "   | 1.40                       | 73.50  | 13.68                                | 80.1                     | 68.9     | 79        | "                   |
| "         | 21 ... | 7,300               | 1,037             | "        | "   | 1.55                       | 113.15   | 9.12                                 | 83.1                     | 72.9     | 74        | "                   |
| "         | 22 ... | 7,850               | 1,033             | "        | "   | 1.40                       | 109.90   | 17.10                                | 84.5                     | 71.4     | 93        | "                   |
| "         | 23 ... | 6,650               | 1,038             | Nil.     | "   | 1.50                       | 98.75  | 30.21                                | 82.1                     | 69.4     | 93        | "                   |
| "         | 24 ... | 7,880               | 1,032             | "        | "   | 1.30                       | 102.44   | 11.40                                | 81.6                     | 65.9     | 87        | "                   |
| "         | 25 ... | 4,500               | 1,038             | "        | "   | 1.80                       | 81.00  | 28.50                                | 78.1                     | 69.4     | 93        | "                   |
| "         | 26 ... | 8,370               | 1,030             | "        | "   | 1.10                       | 92.07  | 22.80                                | 80.6                     | 69.9     | 97        | "                   |
| "         | 27 ... | 6,460               | 1,030             | "        | "   | 2.20                       | 142.12   | 18.24                                | 78.1                     | 67.4     | 88        | "                   |
| "         | 28 ... | 6,060               | 1,038             | "        | "   | 2.30                       | 139.38   | 24.51                                | 83.6                     | 67.4     | 85        | "                   |

| Date.    | Quantity collected. | Specific Gravity. | Albumen. | Total Hippuric Acid excreted in the Urine during 24 hours. Grammes. | Urea. Grammes per 100 c.c. | Total Urea excreted in Urine during 24 hours. Grammes. | Water drunk daily. Litres. | TEMPERATURE IN SHADE °F. |          | Humidity. | Hæmatozoa in Blood. |         |
|----------|---------------------|-------------------|----------|---|----------------------------|--|----------------------------|--------------------------|----------|-----------|---------------------|---------|
|          |                     |                   |          |   |                            |  |                            | Maximum.                 | Minimum. |           |                     |         |
| 1894.    |                     |                   |          |   |                            |  |                            |                          |          |           |                     |         |
| October  | 29 ...              | 4,300             | 1,050    | Nil.  | Nil.                       | 3.05   | 131.15                     | 20.52                    | 87.5     | 66.4      | 74                  | Absent. |
| "        | 30 ...              | 4,260             | 1,054    | "   | "                          | 3.10   | 132.06                     | 27.36                    | 85.5     | 61.9      | 74                  | "       |
| "        | 31 ...              | 4,850             | 1,046    | "   | "                          | 2.70   | 130.95                     | 27.93                    | 82.6     | 57.9      | 83                  | "       |
| November | 1 ...               | 3,550             | 1,053    | "   | "                          | 2.90   | 102.95                     | 29.64                    | 82.6     | 62.4      | 75                  | "       |
| "        | 2 ...               | 5,850             | 1,040    | "   | "                          | 1.60   | 93.60                      | 24.51                    | 84.0     | 58.9      | 73                  | "       |
| "        | 3 ...               | 4,920             | 1,045    | "   | "                          | 1.90   | 93.40                      | 17.10                    | 87.0     | 61.9      | 73                  | "       |
| "        | 4 ...               | 5,100             | 1,052    | Trace.  | 4.65                       | 2.80   | 142.80                     | 6.84                     | 87.5     | 61.4      | 76                  | "       |
| "        | 5 ...               | 4,470             | 1,044    | "   | 22.35                      | 2.60   | 116.22                     | 36.34                    | 87.0     | 60.9      | 83                  | "       |
| "        | 6 ...               | 5,160             | 1,051    | "   | 0.00                       | 2.08   | 107.32                     | 24.51                    | 87.5     | 60.9      | 71                  | "       |
| "        | 7 ...               | 4,000             | 1,053    | "   | 3.50                       | 2.52   | 100.80                     | 29.07                    | 85.5     | 56.4      | 58                  | "       |
| "        | 8 ...               | 4,370             | 1,051    | "   | 4.37                       | 2.05   | 89.58                      | 27.36                    | 84.5     | 54.4      | 56                  | "       |
| "        | 9 ...               | 6,010             | 1,048    | "   | Nil.                       | 1.70   | 102.17                     | 21.09                    | 84.5     | 52.4      | 71                  | "       |
| "        | 10 ...              | 5,310             | 1,046    | "   | "                          | 1.60   | 84.96                      | 23.94                    | 87.0     | 58.4      | 59                  | "       |
| "        | 11 ...              | 5,740             | 1,041    | "   | "                          | 1.40   | 80.36                      | 24.51                    | 85.0     | 62.9      | 45                  | "       |
| "        | 12 ...              | 7,060             | 1,045    | "   | "                          | 1.40   | 98.84                      | 25.65                    | 84.0     | 54.9      | 44                  | "       |
| "        | 13 ...              | 4,350             | 1,050    | "   | "                          | 1.70   | 73.95                      | 38.62                    | 84.0     | 51.9      | 51                  | "       |
| "        | 14 ...              | 5,860             | 1,054    | Nil.  | 5.25                       | 2.35   | 137.71                     | 24.51                    | 81.6     | 50.9      | 57                  | "       |
| "        | 15 ...              | 6,220             | 1,040    | "   | 68.42                      | 1.70   | 105.74                     | 23.37                    | 82.6     | 53.4      | 57                  | "       |
| "        | 16 ...              | 10,000            | 1,040    | "   | 8.45                       | 1.02   | 102.00                     | 7.41                     | 87.0     | 61.4      | 61                  | "       |
| "        | 17 ...              | 5,100             | 1,052    | "   | 5.10                       | 1.70   | 86.70                      | 35.77                    | 87.5     | 62.4      | 69                  | "       |
| "        | 18 ...              | 3,950             | 1,060    | "   | 79.00                      | 2.60   | 102.70                     | 26.22                    | 86.5     | 61.4      | 62                  | "       |
| "        | 19 ...              | 5,880             | 1,042    | "   | 29.40                      | 1.81   | 106.42                     | 15.96                    | 87.5     | 58.4      | 79                  | "       |
| "        | 20 ...              | 4,550             | 1,044    | "   | 6.50                       | 1.72   | 78.26                      | 23.94                    | 87.0     | 58.4      | 73                  | "       |
| "        | 21 ...              | 4,530             | 1,050    | "   | 36.24                      | 2.50   | 113.25                     | 11.97                    | 85.5     | 59.4      | 47                  | "       |
| "        | 22 ...              | 5,670             | 1,048    | "   | 45.36                      | 2.15   | 121.90                     | 17.67                    | 86.0     | 57.4      | 52                  | "       |
| "        | 23 ...              | 7,600             | 1,040    | "   | 0.00                       | 1.85   | 140.60                     | 30.21                    | 84.5     | 59.4      | 53                  | "       |
| "        | 24 ...              | 5,000             | 1,050    | "   | 0.00                       | 2.30   | 115.00                     | 23.94                    | 85.0     | 53.4      | 57                  | "       |
| "        | 25 ...              | 5,060             | 1,043    | "   | 0.00                       | 1.90   | 96.14                      | 22.80                    | 84.5     | 54.9      | 50                  | "       |
| "        | 26 ...              | 6,070             | 1,042    | "   | 6.07                       | 2.15   | 130.50                     | 11.97                    | 84.0     | 53.9      | 58                  | "       |
| "        | 27 ...              | 5,310             | 1,044    | "   | 37.17                      | 2.80   | 148.68                     | 17.10                    | 83.6     | 53.4      | 48                  | "       |
| "        | 28 ...              | 4,560             | 1,046    | "   | 5.60                       | 2.80   | 127.68                     | 20.52                    | 83.1     | 57.9      | 54                  | "       |
| "        | 29 ...              | 5,170             | 1,054    | "   | 25.85                      | 2.40   | 124.08                     | 22.23                    | 84.5     | 56.4      | 56                  | "       |
| "        | 30 ...              | 4,250             | 1,057    | "   | 8.50                       | 2.80   | 119.00                     | 18.81                    | 84.0     | 54.4      | 55                  | "       |
| December | 1 ...               | 4,600             | 1,053    | Trace.  | 0.00                       | 2.50   | 115.00                     | 25.08                    | 85.0     | 53.9      | 54                  | "       |
| "        | 2 ...               | 5,080             | 1,050    | Nil.  | 55.88                      | 2.10   | 106.68                     | 26.22                    | 87.5     | 52.9      | 80                  | "       |
| "        | 3 ...               | 4,040             | 1,062    | "   | 60.60                      | 2.82   | 113.92                     | 22.23                    | 88.0     | 56.9      | 68                  | "       |
| "        | 4 ...               | 5,380             | 1,052    | "   | 37.66                      | 1.95   | 104.91                     | 22.23                    | 88.0     | 55.9      | 68                  | "       |
| "        | 5 ...               | 4,290             | 1,055    | "   | 8.58                       | 2.50   | 107.25                     | 23.94                    | 88.0     | 57.4      | 71                  | "       |
| "        | 6 ...               | 4,950             | 1,055    | "   | 74.20                      | 1.94   | 96.03                      | 30.21                    | 89.0     | 56.4      | 73                  | "       |
| "        | 7 ...               | 5,140             | 1,061    | "   | 41.12                      | 2.45   | 125.93                     | 22.80                    | 87.0     | 59.9      | 71                  | "       |
| "        | 8 ...               | 4,200             | 1,055    | "   | 21.00                      | 2.41   | 101.22                     | 25.08                    | 86.5     | 63.9      | 53                  | "       |
| "        | 9 ...               | 3,640             | 1,060    | "   | 14.56                      | 2.61   | 95.00                      | 22.23                    | 85.6     | 54.9      | 60                  | "       |
| "        | 10 ...              | 4,950             | 1,046    | "   | 19.80                      | 1.89   | 93.55                      | 31.92                    | 84.5     | 60.4      | 64                  | "       |
| "        | 11 ...              | 8,480             | 1,034    | "   | 33.92                      | 1.19   | 100.91                     | 32.49                    | 83.6     | 57.4      | 81                  | "       |
| "        | 12 ...              | 3,830             | 1,040    | "   | 7.68                       | 1.42   | 54.38                      | 21.09                    | 83.6     | 53.4      | 77                  | "       |
| "        | 13 ...              | 3,890             | 1,064    | "   | 38.90                      | 2.95   | 114.65                     | 17.67                    | 83.1     | 53.4      | 80                  | "       |
| "        | 14 ...              | 5,675             | 1,049    | "   | 5.67                       | 2.09   | 113.50                     | 17.10                    | 83.1     | 51.5      | 65                  | "       |
| "        | 15 ...              | 6,650             | 1,043    | "   | 0.00                       | 1.95   | 129.67                     | 21.09                    | 87.6     | 55.4      | 64                  | "       |
| "        | 16 ...              | 4,700             | 1,059    | "   | 28.20                      | 2.52   | 118.44                     | 22.80                    | 89.0     | 57.9      | 65                  | "       |
| "        | 17 ...              | 5,850             | 1,031    | "   | 5.85                       | 1.60   | 93.60                      | 28.50                    | 88.0     | 59.4      | 54                  | "       |
| "        | 18 ...              | 5,620             | 1,034    | "   | 11.20                      | 1.60   | 89.92                      | 25.08                    | 87.5     | 59.9      | 46                  | "       |
| "        | 19 ...              | 5,230             | 1,035    | "   | 10.46                      | 1.63   | 87.86                      | 17.10                    | 87.0     | 56.9      | 61                  | "       |
| "        | 20 ...              | 6,455             | 1,043    | "   | 0.00                       | 2.30   | 148.46                     | 27.93                    | 88.0     | 57.4      | 65                  | "       |
| "        | 21 ...              | 6,540             | 1,034    | "   | 0.00                       | 1.83   | 119.68                     | 21.09                    | 86.6     | 58.4      | 71                  | "       |
| "        | 22 ...              | 5,390             | 1,039    | "   | 0.00                       | 2.20   | 118.58                     | 27.36                    | 87.5     | 58.4      | 73                  | "       |
| "        | 23 ...              | 6,585             | 1,040    | "   | 0.00                       | 2.20   | 144.87                     | 23.37                    | 87.0     | 59.9      | 74                  | "       |
| "        | 24 ...              | 5,130             | 1,038    | "   | 5.26                       | 1.87   | 95.93                      | 24.51                    | 86.0     | 55.4      | 76                  | "       |
| "        | 25 ...              | 5,510             | 1,047    | "   | 22.04                      | 2.15   | 118.46                     | 29.64                    | 85.5     | 54.9      | 61                  | "       |
| "        | 26 ...              | 5,100             | 1,053    | "   | 15.30                      | 2.48   | 126.48                     | 29.07                    | 85.5     | 53.9      | 51                  | "       |
| "        | 27 ...              | 6,200             | 1,035    | "   | Nil.                       | 1.41   | 87.42                      | 21.66                    | 83.6     | 56.4      | 60                  | "       |
| "        | 28 ...              | 5,910             | 1,035    | "   | "                          | 1.40   | 82.74                      | 30.21                    | 84.5     | 53.9      | 44                  | "       |
| "        | 29 ...              | 4,990             | 1,045    | "   | "                          | 2.00   | 99.80                      | 28.50                    | 84.5     | 51.9      | 59                  | "       |
| "        | 30 ...              | 4,200             | 1,038    | "   | "                          | 1.55   | 65.10                      | 7.41                     | 86.0     | 50.5      | 60                  | "       |
| "        | 31 ...              | 6,350             | 1,033    | "   | "                          | 1.70   | 107.95                     | 22.23                    | 88.5     | 51.5      | 59                  | "       |
| 1895.    |                     |                   |          |   |                            |  |                            |                          |          |           |                     |         |
| January  | 1 ...               | 6,900             | 1,034    | "   | "                          | 1.90   | 131.10                     | 15.39                    | 87.5     | 53.4      | 61                  | "       |



## RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED

Austray

*Australian  
Disease, "Surra" (by gastric ingestion)*

Date of Attack: 1-12-93

Resist Cured

Date of Result:

Age 17 \_\_\_\_\_ Sex \_\_\_\_\_ Gelding

Reinsür No. LXXXIX Ward

Colour. Black

| Dates of Observation.               |                              | Nov.          |      | 18      | 19 | 20      | 21 | 22      | 23 | 24      | 25 | 26      | 27 | 28      | 29 | 30      | Dec. | 1       | 2  | 3       | 4  | 5       | 6  | 7       | 8  | 9       | 10 |
|-------------------------------------|------------------------------|---------------|------|---------|----|---------|----|---------|----|---------|----|---------|----|---------|----|---------|------|---------|----|---------|----|---------|----|---------|----|---------|----|
| Days of Disease                     |                              |               |      |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
| Organisms in Blood                  |                              |               |      |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
| Total Urine excreted daily (grains) | True excreted daily (liters) | Temperature F | C    | Time AM | PM | Time AM | PM | Time AM | PM | Time AM | PM | Time AM | PM | Time AM | PM | Time AM | PM   | Time AM | PM | Time AM | PM | Time AM | PM | Time AM | PM | Time AM | PM |
| 180                                 | 12                           | 104           | 40°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 103           | 39°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 102           | 38°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 101           | 37°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 100           | 36°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 99            | 35°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 98            | 34°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 97            | 33°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 96            | 32°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 95            | 31°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 94            | 30°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 93            | 29°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 92            | 28°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 91            | 27°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 90            | 26°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 89            | 25°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 88            | 24°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 87            | 23°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 86            | 22°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 85            | 21°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 84            | 20°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 83            | 19°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 82            | 18°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 81            | 17°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 80            | 16°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 79            | 15°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 78            | 14°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 77            | 13°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 76            | 12°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 75            | 11°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 74            | 10°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 73            | 9°   |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 72            | 8°   |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 71            | 7°   |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 70            | 6°   |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 69            | 5°   |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 68            | 4°   |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 67            | 3°   |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 66            | 2°   |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 65            | 1°   |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 64            | 0°   |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 63            | -1°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 62            | -2°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 61            | -3°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 60            | -4°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 59            | -5°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 58            | -6°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 57            | -7°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 56            | -8°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 55            | -9°  |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 54            | -10° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 53            | -11° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 52            | -12° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 51            | -13° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 50            | -14° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 49            | -15° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 48            | -16° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 47            | -17° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 46            | -18° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 45            | -19° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 44            | -20° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 43            | -21° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 42            | -22° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 41            | -23° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 40            | -24° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 39            | -25° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 38            | -26° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 37            | -27° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 36            | -28° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 35            | -29° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 34            | -30° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 33            | -31° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 32            | -32° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 31            | -33° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 30            | -34° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 29            | -35° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 28            | -36° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 27            | -37° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 26            | -38° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 25            | -39° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 24            | -40° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 23            | -41° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 22            | -42° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 21            | -43° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 20            | -44° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 19            | -45° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 18            | -46° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 17            | -47° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 16            | -48° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 15            | -49° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 14            | -50° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 13            | -51° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 12            | -52° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 11            | -53° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 10            | -54° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         |    |         |    |         |    |         |    |         |    |
|                                     |                              | 9             | -55° |         |    |         |    |         |    |         |    |         |    |         |    |         |      |         | </ |         |    |         |    |         |    |         |    |

Total Urea \_\_\_\_\_  
Water drunk during \_\_\_\_\_  
24 hour: \_\_\_\_\_

|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|

Urine passed during  
24 hours \_\_\_\_\_  
Temperature \_\_\_\_\_  
Hematofexa \_\_\_\_\_

X 4 oz: soiled blood containing swarms of *Hamaxoa* administered 24.11.93.

Drawn & Litho by Photodisco. Office Nov 19 1894.











## RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

Age 17 — Sex Gelding — Colour Black

*Disease "Surra" (by gastric ingestion)*

Date of Attack 1. 12. 93.

### Results Cured

*Date of Result-*

Register No.

Ward

Ward

[illegible]

|                    |                     |
|--------------------|---------------------|
| Total Urea         | Urine passed during |
| Water drunk during | 24 hours            |
| 24 hours           | Temperature         |
|                    | Haematocrit         |

Urine passed during }  
24 hours }  
Temperature }  
Hematuria }

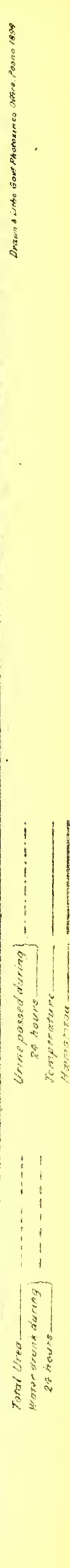
*Neom. & Linn. v. 107. Pöschinger, Wien. Pöschinger 1824*



RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

Australian Age 17 Sex Gelding Colour Black  
Disease "Surra" (by gastric ingestion) Date of Attack 1. 12. 93. Result Cured Register No. LXXXIX Ward —

| Urites of Observation                       | Days of Disease | Total Urea excreted daily (Grams) | Urine Temperature F | Urine Temperature C | Jan. 94 |       | Feb.  |       | 1. 12. 93. |       | Date of Result |       | Sex Gelding |       | Colour Black |       |
|---|-----------------|-----------------------------------|---------------------|---------------------|---------|-------|-------|-------|------------|-------|----------------|-------|-------------|-------|--------------|-------|
|   |                 |                                   |                     |                     | Time    | Time  | Time  | Time  | Time       | Time  | Time           | Time  | Time        | Time  | Time         | Time  |
| 180   | 12              | 44                                | 44                  | 44                  | AM PM   | AM PM | AM PM | AM PM | AM PM      | AM PM | AM PM          | AM PM | AM PM       | AM PM | AM PM        | AM PM |
| 160   | 12              | 44                                | 44                  | 44                  | AM PM   | AM PM | AM PM | AM PM | AM PM      | AM PM | AM PM          | AM PM | AM PM       | AM PM | AM PM        | AM PM |
| 120   | 8               | 44                                | 44                  | 44                  | AM PM   | AM PM | AM PM | AM PM | AM PM      | AM PM | AM PM          | AM PM | AM PM       | AM PM | AM PM        | AM PM |
| 90  | 6               | 44                                | 44                  | 44                  | AM PM   | AM PM | AM PM | AM PM | AM PM      | AM PM | AM PM          | AM PM | AM PM       | AM PM | AM PM        | AM PM |
| 60  | 4               | 44                                | 44                  | 44                  | AM PM   | AM PM | AM PM | AM PM | AM PM      | AM PM | AM PM          | AM PM | AM PM       | AM PM | AM PM        | AM PM |
| 30  | 2               | 44                                | 44                  | 44                  | AM PM   | AM PM | AM PM | AM PM | AM PM      | AM PM | AM PM          | AM PM | AM PM       | AM PM | AM PM        | AM PM |
| 10  | 1               | 44                                | 44                  | 44                  | AM PM   | AM PM | AM PM | AM PM | AM PM      | AM PM | AM PM          | AM PM | AM PM       | AM PM | AM PM        | AM PM |
| 0   | 0               | 44                                | 44                  | 44                  | AM PM   | AM PM | AM PM | AM PM | AM PM      | AM PM | AM PM          | AM PM | AM PM       | AM PM | AM PM        | AM PM |
| Record of Organisms in Blood                |                 |                                   |                     |                     |         |       |       |       |            |       |                |       |             |       |              |       |
| Water drunk daily (in litres) 12 to 12 noon |                 |                                   |                     |                     |         |       |       |       |            |       |                |       |             |       |              |       |
| Swarming                                    |                 |                                   |                     |                     |         |       |       |       |            |       |                |       |             |       |              |       |
| Very numerous                               |                 |                                   |                     |                     |         |       |       |       |            |       |                |       |             |       |              |       |
| Numerous                                    |                 |                                   |                     |                     |         |       |       |       |            |       |                |       |             |       |              |       |
| Few   |                 |                                   |                     |                     |         |       |       |       |            |       |                |       |             |       |              |       |
| Absence                                     |                 |                                   |                     |                     |         |       |       |       |            |       |                |       |             |       |              |       |







## RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

Austrian

Disease "Surra" (b) gastric ingestion

*Date of Attack* 1. 12. 93

Result Cured.

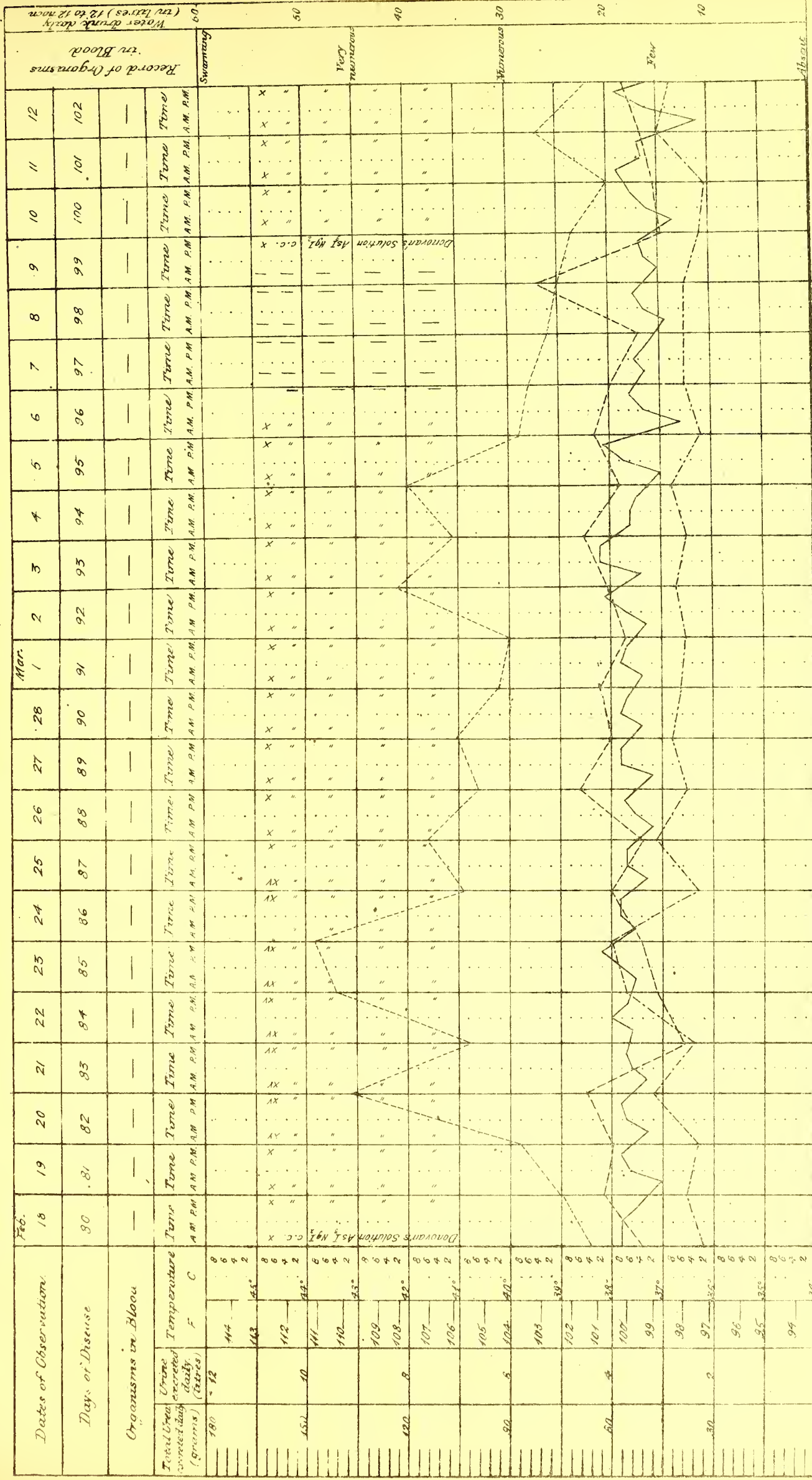
*Date of Result*

Age 17 Sex Gelding

Colour Black

Ward

Ward



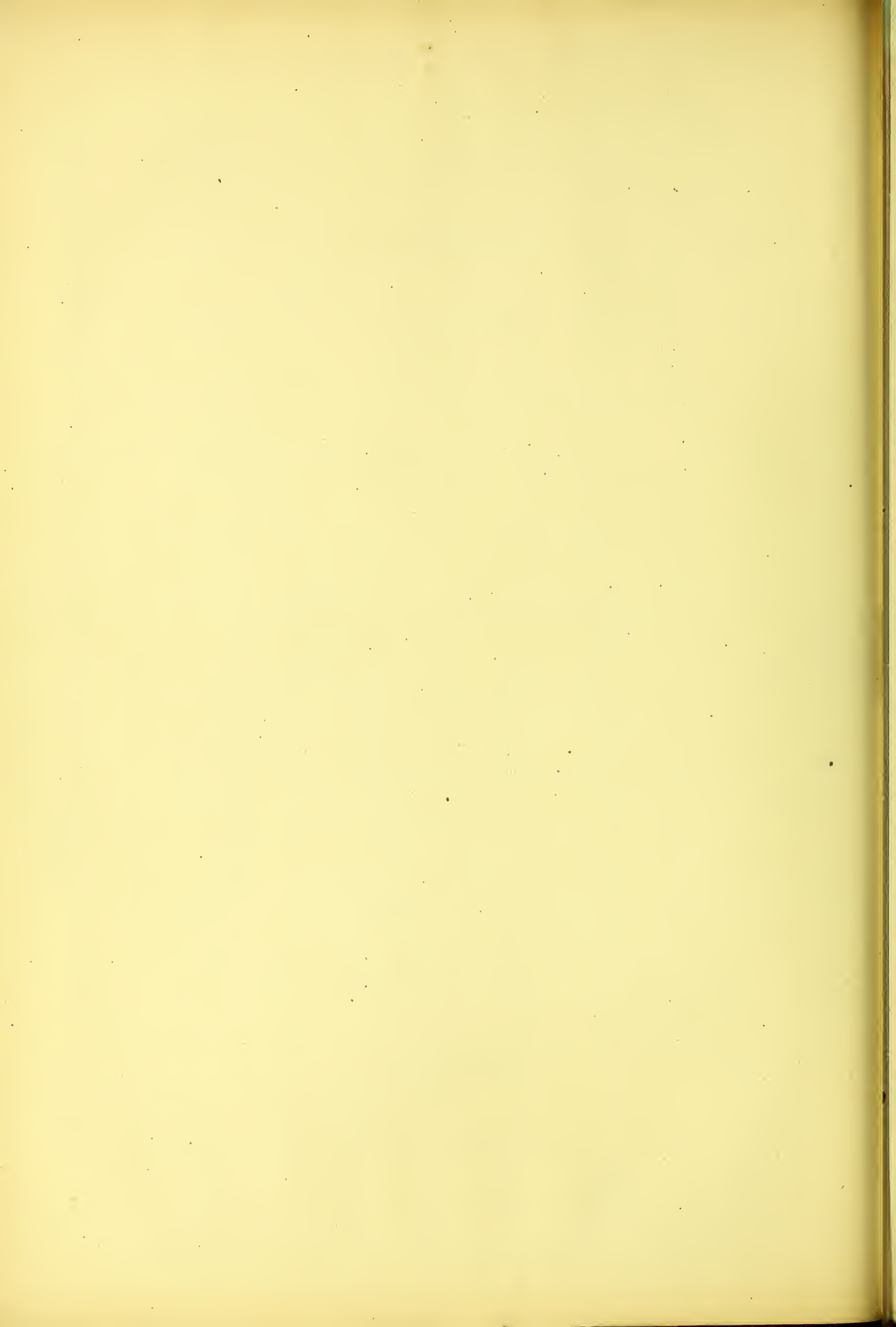
Urine passed during

24 hours -  
Temperature

Hematozoa

x 4 grs. arsenic administered at 6 p.m.

Drawn & Litho Govt. Printing Office, Vienna 1899.





RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

Disease Surra (by gastric ingestion) Australian Age Aged Sex Gelding Colour Black Register No LXXXIX Ward Result Cured Date of Attack 1-12-93 Date of Result April 1

| Dates of Observation.             |                               | March 13 |    | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 27  | 28  | 29  | 30  | 31  | April 1 |     |     |     | 2   | 3  | 4 |
|-----------------------------------|-------------------------------|----------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|-----|-----|-----|-----|----|---|
| Total Urea excreted daily (Grams) | Urine excreted daily (Litres) | 103      |    | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122     | 123 | 124 | 125 |     |    |   |
|                                   |                               | AM       | PM | AM  | PM  | AM  | PM  | AM  | PM  | AM  | PM  | AM  | PM  | AM  | PM  | AM  | PM  | AM  | PM  | AM  | PM  | AM      | PM  | AM  | PM  | AM  | PM |   |
| Organisms in Blood                |                               | —        |    | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —       | —   | —   | —   | —   |    |   |
| Temperature                       |                               | F        |    | C   | F   |     | C   | F   |     | C   | F   |     | C   | F   |     | C   | F   |     | C   | F   |     | C       | F   |     | C   | F   |    | C |
| 180                               | 12                            | 114      | 45 | 2   | 113 | 45  | 2   | 112 | 44  | 2   | 111 | 44  | 2   | 110 | 43  | 2   | 109 | 42  | 2   | 108 | 41  | 2       | 107 | 40  | 2   | 106 | 39 | 2 |
| 160                               | 10                            | 111      | 43 | 2   | 110 | 42  | 2   | 109 | 41  | 2   | 108 | 40  | 2   | 107 | 39  | 2   | 106 | 38  | 2   | 105 | 37  | 2       | 104 | 36  | 2   | 103 | 35 | 2 |
| 140                               | 8                             | 108      | 40 | 2   | 107 | 39  | 2   | 106 | 38  | 2   | 105 | 37  | 2   | 104 | 36  | 2   | 103 | 35  | 2   | 102 | 34  | 2       | 101 | 33  | 2   | 100 | 32 | 2 |
| 120                               | 6                             | 106      | 39 | 2   | 105 | 38  | 2   | 104 | 37  | 2   | 103 | 36  | 2   | 102 | 35  | 2   | 101 | 34  | 2   | 100 | 33  | 2       | 99  | 32  | 2   | 98  | 31 | 2 |
| 100                               | 4                             | 103      | 36 | 2   | 102 | 35  | 2   | 101 | 34  | 2   | 100 | 33  | 2   | 99  | 32  | 2   | 98  | 31  | 2   | 97  | 30  | 2       | 96  | 29  | 2   | 95  | 28 | 2 |
| 80                                | 2                             | 100      | 33 | 2   | 99  | 32  | 2   | 98  | 31  | 2   | 97  | 30  | 2   | 96  | 29  | 2   | 95  | 28  | 2   | 94  | 27  | 2       | 93  | 26  | 2   | 92  | 25 | 2 |
| 60                                | 0                             | 97       | 30 | 2   | 96  | 29  | 2   | 95  | 28  | 2   | 94  | 27  | 2   | 93  | 26  | 2   | 92  | 25  | 2   | 91  | 24  | 2       | 90  | 23  | 2   | 89  | 22 | 2 |
| 40                                | 0                             | 94       | 27 | 2   | 93  | 26  | 2   | 92  | 25  | 2   | 91  | 24  | 2   | 90  | 23  | 2   | 89  | 22  | 2   | 88  | 21  | 2       | 87  | 20  | 2   | 86  | 19 | 2 |
| 20                                | 0                             | 91       | 24 | 2   | 90  | 23  | 2   | 89  | 22  | 2   | 88  | 21  | 2   | 87  | 20  | 2   | 86  | 19  | 2   | 85  | 18  | 2       | 84  | 17  | 2   | 83  | 16 | 2 |
| 0                                 | 0                             | 88       | 21 | 2   | 87  | 20  | 2   | 86  | 19  | 2   | 85  | 18  | 2   | 84  | 17  | 2   | 83  | 16  | 2   | 82  | 15  | 2       | 81  | 14  | 2   | 80  | 13 | 2 |
| Record of Organisms in Blood      |                               | —        |    | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —       | —   | —   | —   | —   | —  | — |
| Water drunk daily (Litres)        |                               | —        |    | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —       | —   | —   | —   | —   | —  | — |
| Swarming                          |                               | —        |    | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —       | —   | —   | —   | —   | —  | — |
| Very numerous                     |                               | —        |    | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —       | —   | —   | —   | —   | —  | — |
| Numerous                          |                               | —        |    | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —       | —   | —   | —   | —   | —  | — |
| Few                               |                               | —        |    | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —       | —   | —   | —   | —   | —  | — |
| None                              |                               | —        |    | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —       | —   | —   | —   | —   | —  | — |

Drawn & Litho Goul Photodines Office 9/12/93

Total Urea                      Urine excreted                       
Water drunk                      Temperature                       
Haematocrit





## RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

*Australian* \_\_\_\_\_ *Age* *Aged* \_\_\_\_\_ *Sex* *Gelding* \_\_\_\_\_ *Colour* *Black* \_\_\_\_\_  
*Disease* *'Surra' (bygastric ingestion)* \_\_\_\_\_ *Date of Attack* *1. 12. 93* \_\_\_\_\_ *Result Cured* \_\_\_\_\_ *Register No* *LXXXIX* \_\_\_\_\_ *Ward* \_\_\_\_\_

| Dates of Observation |                 | Temperature |    | Urine passed daily (grams) |                             | Urine passed daily (litres) |      | Record of Organisms in Blood |      | Water taken daily (litres) |      |
|----------------------|-----------------|-------------|----|----------------------------|-----------------------------|-----------------------------|------|------------------------------|------|----------------------------|------|
| April                | Days of Disease | F           | C  | Urine passed daily (grams) | Urine passed daily (litres) | Time                        | Time | Time                         | Time | Time                       | Time |
| 5                    | 126             | 104         | 40 | 120                        | 8                           | 107                         | 106  | 105                          | 104  | 103                        | 102  |
| 6                    | 127             | 102         | 39 | 100                        | 4                           | 99                          | 98   | 97                           | 96   | 95                         | 94   |
| 7                    | 128             | 101         | 38 | 90                         | 2                           | 91                          | 90   | 89                           | 88   | 87                         | 86   |
| 8                    | 129             | 100         | 37 | 80                         | 1                           | 88                          | 87   | 86                           | 85   | 84                         | 83   |
| 9                    | 130             | 99          | 36 | 70                         | 1                           | 86                          | 85   | 84                           | 83   | 82                         | 81   |
| 10                   | 131             | 98          | 35 | 60                         | 1                           | 84                          | 83   | 82                           | 81   | 80                         | 79   |
| 11                   | 132             | 97          | 34 | 50                         | 1                           | 82                          | 81   | 80                           | 79   | 78                         | 77   |
| 12                   | 133             | 96          | 33 | 40                         | 1                           | 80                          | 79   | 78                           | 77   | 76                         | 75   |
| 13                   | 134             | 95          | 32 | 30                         | 1                           | 78                          | 77   | 76                           | 75   | 74                         | 73   |
| 14                   | 135             | 94          | 31 | 20                         | 1                           | 76                          | 75   | 74                           | 73   | 72                         | 71   |
| 15                   | 136             | 93          | 30 | 10                         | 1                           | 74                          | 73   | 72                           | 71   | 70                         | 69   |
| 16                   | 137             | 92          | 29 | 10                         | 1                           | 72                          | 71   | 70                           | 69   | 68                         | 67   |
| 17                   | 138             | 91          | 28 | 10                         | 1                           | 70                          | 69   | 68                           | 67   | 66                         | 65   |
| 18                   | 139             | 90          | 27 | 10                         | 1                           | 68                          | 67   | 66                           | 65   | 64                         | 63   |
| 19                   | 140             | 89          | 26 | 10                         | 1                           | 66                          | 65   | 64                           | 63   | 62                         | 61   |
| 20                   | 141             | 88          | 25 | 10                         | 1                           | 64                          | 63   | 62                           | 61   | 60                         | 59   |
| 21                   | 142             | 87          | 24 | 10                         | 1                           | 62                          | 61   | 60                           | 59   | 58                         | 57   |
| 22                   | 143             | 86          | 23 | 10                         | 1                           | 60                          | 59   | 58                           | 57   | 56                         | 55   |
| 23                   | 144             | 85          | 22 | 10                         | 1                           | 58                          | 57   | 56                           | 55   | 54                         | 53   |
| 24                   | 145             | 84          | 21 | 10                         | 1                           | 56                          | 55   | 54                           | 53   | 52                         | 51   |
| 25                   | 146             | 83          | 20 | 10                         | 1                           | 54                          | 53   | 52                           | 51   | 50                         | 49   |
| 26                   | 147             | 82          | 19 | 10                         | 1                           | 52                          | 51   | 50                           | 49   | 48                         | 47   |
| 27                   | 148             | 81          | 18 | 10                         | 1                           | 50                          | 49   | 48                           | 47   | 46                         | 45   |

*Drawn & Litho Govt Photodupl. Office, Poonn 1425*

|                |       |       |
|----------------|-------|-------|
| Total Urea     | ----- | ----- |
| Water taken    | ----- | ----- |
| Urine excreted | ----- | ----- |
| Temperature    | ----- | ----- |
| Hamatozoa      | ----- | ----- |











## RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

*Australian*

Australian

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Age \_\_\_\_\_

Sex Gelding-

Colour Black

1880

[illegible]

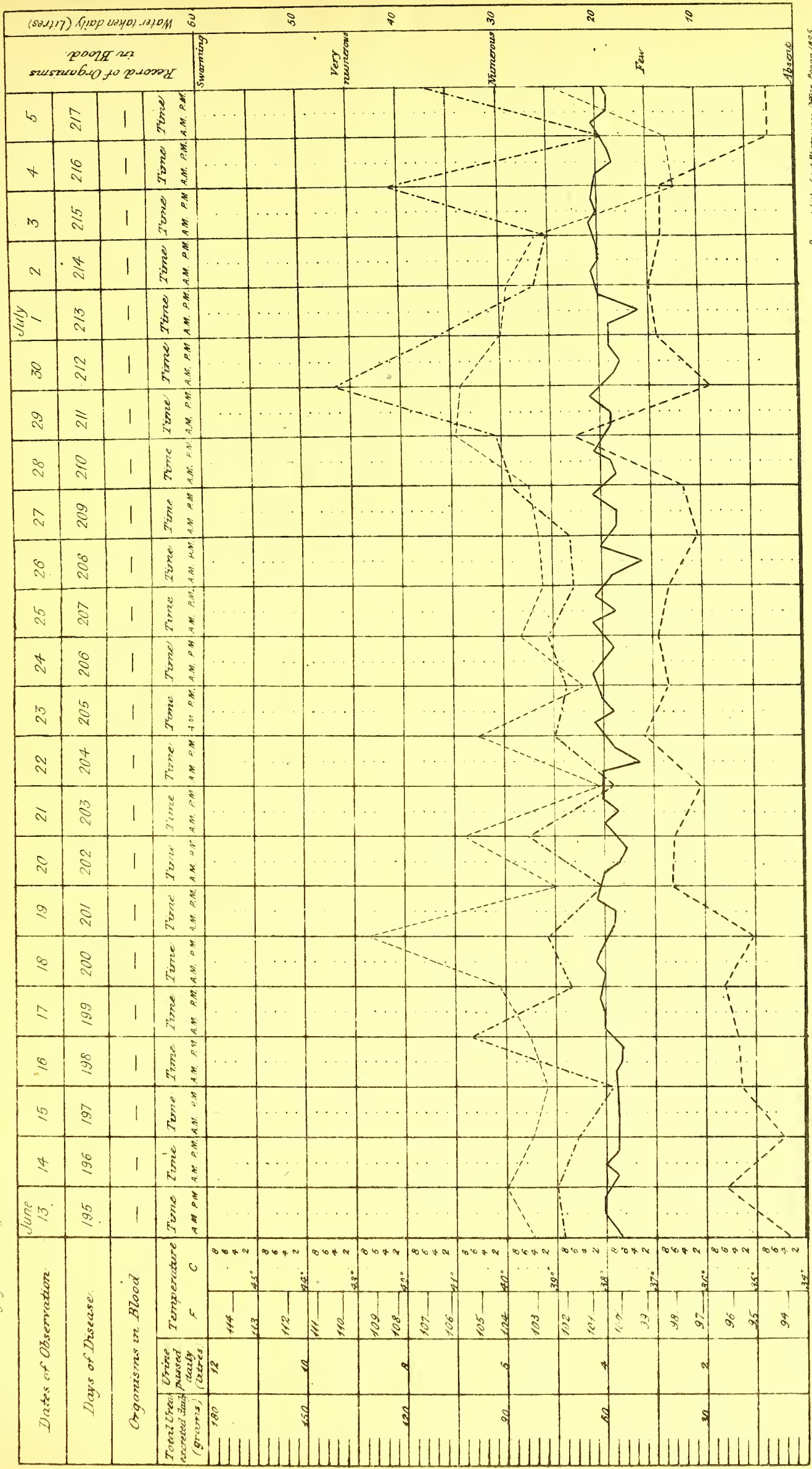
|             |              |
|-------------|--------------|
| Total Urea  | Urine passed |
| Water taken | Temperature  |
|             | Haemolysis   |

DeWitt & Linn Govt Pharmacopoeia, Price \$3.00 1895



RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

Australian                      Age Aged Sex Gelding Colour Black  
Disease "Surra" (by gastric ingestion) Date of Attack 1-12-93 Results Cured Date of Reside                      Register No. LXXXIX Ward                     



Urine passed                      Temperature                       
Water taken                      Hemoglobin











*Austrorion* \_\_\_\_\_ *Age* \_\_\_\_\_ *Aged* \_\_\_\_\_ *Sex* \_\_\_\_\_ *Gelding* \_\_\_\_\_ *Color* \_\_\_\_\_ *Black* \_\_\_\_\_  
*Disease* "Surra (by gastric ingestion)" \_\_\_\_\_ *Date of Attack* 1-12-93 \_\_\_\_\_ *Result* \_\_\_\_\_ *Cured* \_\_\_\_\_ *Register No.* LXXXIX \_\_\_\_\_ *Word* \_\_\_\_\_

|             |              |
|-------------|--------------|
| Total Urea  | Urine passed |
| Water taken | Temperature  |
|             | Haematocrit  |





Australian \_\_\_\_\_ Age Aged \_\_\_\_\_ Sex Males \_\_\_\_\_ Colour Black  
 " \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_  
 Disease "Surra" (by gastric ingestion) \_\_\_\_\_ Date of Attack \_\_\_\_\_ 1 - 12 - 93 \_\_\_\_\_ Result Cured \_\_\_\_\_ Register No. LXXXIX \_\_\_\_\_ Ward \_\_\_\_\_

Drawn & Litho Geo & Pioneering Co. Ont. No. 10000 1895

|             |              |
|-------------|--------------|
| Total Urea  | Urine passed |
| Water taken | Temperature  |
|             | Haematuria   |





## RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

Australian

Australian  
"Surra" (by gastric Injection)

Date of Attack-

1-12-93

| Result | Cured |
|--------|-------|
| 1      | 1     |
| 2      | 2     |
| 3      | 3     |
| 4      | 4     |
| 5      | 5     |
| 6      | 6     |
| 7      | 7     |
| 8      | 8     |
| 9      | 9     |
| 10     | 10    |
| 11     | 11    |
| 12     | 12    |
| 13     | 13    |
| 14     | 14    |
| 15     | 15    |
| 16     | 16    |
| 17     | 17    |
| 18     | 18    |
| 19     | 19    |
| 20     | 20    |
| 21     | 21    |
| 22     | 22    |
| 23     | 23    |
| 24     | 24    |
| 25     | 25    |
| 26     | 26    |
| 27     | 27    |
| 28     | 28    |
| 29     | 29    |
| 30     | 30    |
| 31     | 31    |
| 32     | 32    |
| 33     | 33    |
| 34     | 34    |
| 35     | 35    |
| 36     | 36    |
| 37     | 37    |
| 38     | 38    |
| 39     | 39    |
| 40     | 40    |
| 41     | 41    |
| 42     | 42    |
| 43     | 43    |
| 44     | 44    |
| 45     | 45    |
| 46     | 46    |
| 47     | 47    |
| 48     | 48    |
| 49     | 49    |
| 50     | 50    |
| 51     | 51    |
| 52     | 52    |
| 53     | 53    |
| 54     | 54    |
| 55     | 55    |
| 56     | 56    |
| 57     | 57    |
| 58     | 58    |
| 59     | 59    |
| 60     | 60    |
| 61     | 61    |
| 62     | 62    |
| 63     | 63    |
| 64     | 64    |
| 65     | 65    |
| 66     | 66    |
| 67     | 67    |
| 68     | 68    |
| 69     | 69    |
| 70     | 70    |
| 71     | 71    |
| 72     | 72    |
| 73     | 73    |
| 74     | 74    |
| 75     | 75    |
| 76     | 76    |
| 77     | 77    |
| 78     | 78    |
| 79     | 79    |
| 80     | 80    |
| 81     | 81    |
| 82     | 82    |
| 83     | 83    |
| 84     | 84    |
| 85     | 85    |
| 86     | 86    |
| 87     | 87    |
| 88     | 88    |
| 89     | 89    |
| 90     | 90    |
| 91     | 91    |
| 92     | 92    |
| 93     | 93    |
| 94     | 94    |
| 95     | 95    |
| 96     | 96    |
| 97     | 97    |
| 98     | 98    |
| 99     | 99    |
| 100    | 100   |

— Age Ag  
Date of Result.

Sex-Gelding-Register No. \_\_\_\_\_

Colour Black.

---

[illegible]

Total Urea  
Never Drunk

1  
2  
3  
4  
5  
6  
7  
8  
9  
10

Urine passed—

11

At Littleton, Colo. 1908. Photo.

COPIES DESTROYED











## RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED:

Austrian

*Australian*  
*"Surra" (by gastric ingestion)*  
*Disease*

*Date of Attack, 1-12-93.*

*Result Cured -*

Age \_\_\_\_\_ Date of Result \_\_\_\_\_

Sex Gelding

Colour Black

Disease "Surra" (by gastric ingestion) [

Date of Attack, 1-12-93.

Result Cured.

Date of Result.

Register

X—Ward—

| Dates of Observation |     | Urine passed daily (litres) | Temperature | Record of Organisms in Blood |      |
|----------------------|-----|-----------------------------|-------------|------------------------------|------|
| Oct                  | Nov |                             |             | Time                         | Time |
| 29                   | 30  | 12                          | 8           | 1                            | 31   |
| 30                   | 31  | 12                          | 8           | 1                            | 31   |
| 31                   | 1   | 12                          | 8           | 1                            | 31   |
| 1                    | 2   | 12                          | 8           | 1                            | 31   |
| 2                    | 3   | 12                          | 8           | 1                            | 31   |
| 3                    | 4   | 12                          | 8           | 1                            | 31   |
| 4                    | 5   | 12                          | 8           | 1                            | 31   |
| 5                    | 6   | 12                          | 8           | 1                            | 31   |
| 6                    | 7   | 12                          | 8           | 1                            | 31   |
| 7                    | 8   | 12                          | 8           | 1                            | 31   |
| 8                    | 9   | 12                          | 8           | 1                            | 31   |
| 9                    | 10  | 12                          | 8           | 1                            | 31   |
| 10                   | 11  | 12                          | 8           | 1                            | 31   |
| 11                   | 12  | 12                          | 8           | 1                            | 31   |
| 12                   | 13  | 12                          | 8           | 1                            | 31   |
| 13                   | 14  | 12                          | 8           | 1                            | 31   |
| 14                   | 15  | 12                          | 8           | 1                            | 31   |
| 15                   | 16  | 12                          | 8           | 1                            | 31   |
| 16                   | 17  | 12                          | 8           | 1                            | 31   |
| 17                   | 18  | 12                          | 8           | 1                            | 31   |
| 18                   | 19  | 12                          | 8           | 1                            | 31   |
| 19                   | 20  | 12                          | 8           | 1                            | 31   |
| 20                   | 21  | 12                          | 8           | 1                            | 31   |
| 21                   | 22  | 12                          | 8           | 1                            | 31   |
| 22                   | 23  | 12                          | 8           | 1                            | 31   |
| 23                   | 24  | 12                          | 8           | 1                            | 31   |
| 24                   | 25  | 12                          | 8           | 1                            | 31   |
| 25                   | 26  | 12                          | 8           | 1                            | 31   |
| 26                   | 27  | 12                          | 8           | 1                            | 31   |
| 27                   | 28  | 12                          | 8           | 1                            | 31   |
| 28                   | 29  | 12                          | 8           | 1                            | 31   |
| 29                   | 30  | 12                          | 8           | 1                            | 31   |
| 30                   | 31  | 12                          | 8           | 1                            | 31   |

Drawn & Lith: Govt Photodup. Office, Dec 1, 1945

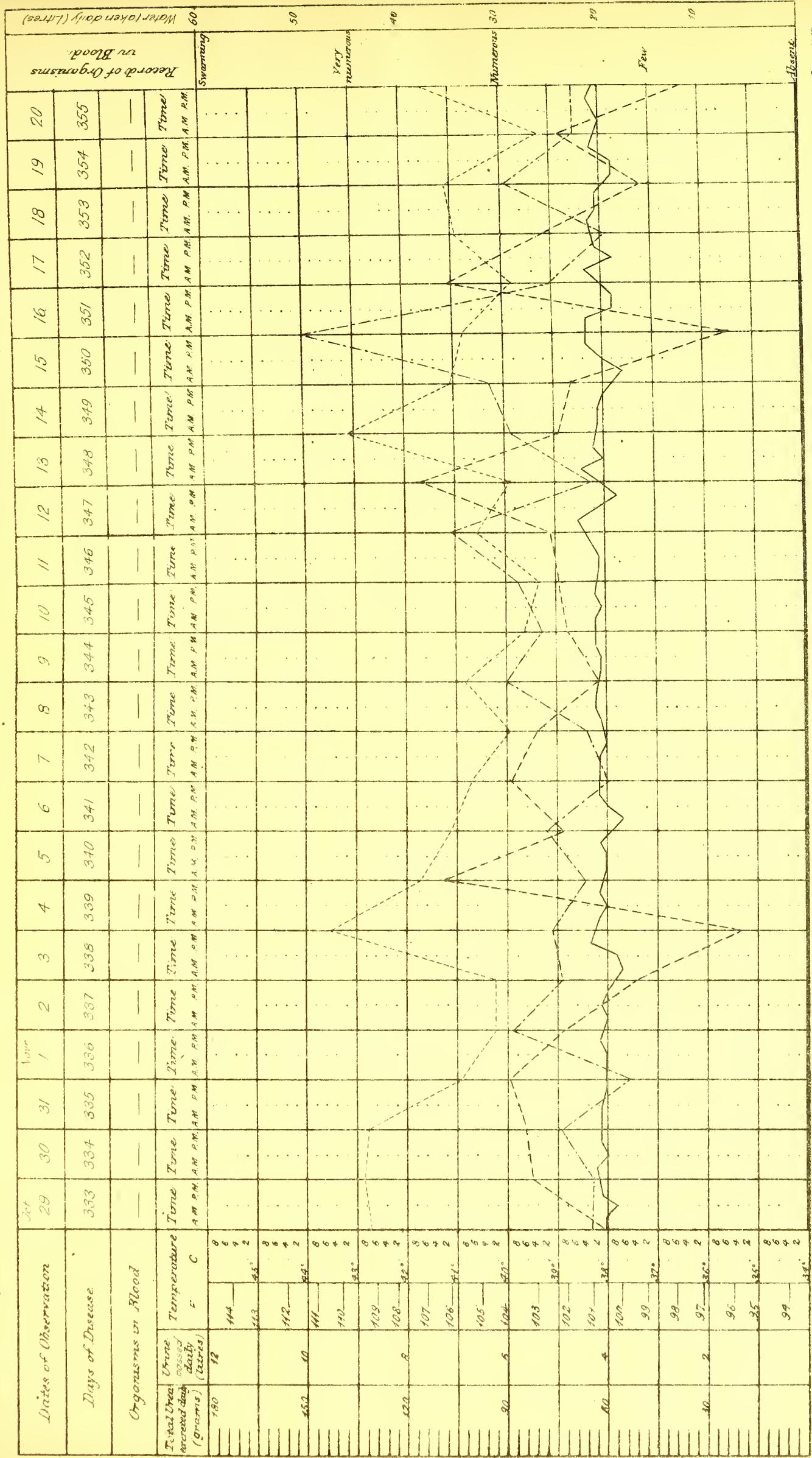
|    | Total Urea | Urea-taken | Urine passed | Temperature | Haematocrit |
|----|------------|------------|--------------|-------------|-------------|
| 1  | 100        | 100        | 100          | 100         | 100         |
| 2  | 100        | 100        | 100          | 100         | 100         |
| 3  | 100        | 100        | 100          | 100         | 100         |
| 4  | 100        | 100        | 100          | 100         | 100         |
| 5  | 100        | 100        | 100          | 100         | 100         |
| 6  | 100        | 100        | 100          | 100         | 100         |
| 7  | 100        | 100        | 100          | 100         | 100         |
| 8  | 100        | 100        | 100          | 100         | 100         |
| 9  | 100        | 100        | 100          | 100         | 100         |
| 10 | 100        | 100        | 100          | 100         | 100         |
| 11 | 100        | 100        | 100          | 100         | 100         |
| 12 | 100        | 100        | 100          | 100         | 100         |
| 13 | 100        | 100        | 100          | 100         | 100         |
| 14 | 100        | 100        | 100          | 100         | 100         |
| 15 | 100        | 100        | 100          | 100         | 100         |
| 16 | 100        | 100        | 100          | 100         | 100         |
| 17 | 100        | 100        | 100          | 100         | 100         |
| 18 | 100        | 100        | 100          | 100         | 100         |
| 19 | 100        | 100        | 100          | 100         | 100         |
| 20 | 100        | 100        | 100          | 100         | 100         |
| 21 | 100        | 100        | 100          | 100         | 100         |
| 22 | 100        | 100        | 100          | 100         | 100         |
| 23 | 100        | 100        | 100          | 100         | 100         |
| 24 | 100        | 100        | 100          | 100         | 100         |
| 25 | 100        | 100        | 100          | 100         | 100         |
| 26 | 100        | 100        | 100          | 100         | 100         |
| 27 | 100        | 100        | 100          | 100         | 100         |
| 28 | 100        | 100        | 100          | 100         | 100         |
| 29 | 100        | 100        | 100          | 100         | 100         |
| 30 | 100        | 100        | 100          | 100         | 100         |
| 31 | 100        | 100        | 100          | 100         | 100         |
| 32 | 100        | 100        | 100          | 100         | 100         |
| 33 | 100        | 100        | 100          | 100         | 100         |
| 34 | 100        | 100        | 100          | 100         | 100         |
| 35 | 100        | 100        | 100          | 100         | 100         |
| 36 | 100        | 100        | 100          | 100         | 100         |
| 37 | 100        | 100        | 100          | 100         | 100         |
| 38 | 100        | 100        | 100          | 100         | 100         |
| 39 | 100        | 100        | 100          | 100         | 100         |
| 40 | 100        | 100        | 100          | 100         | 100         |
| 41 | 100        | 100        | 100          | 100         | 100         |
| 42 | 100        | 100        | 100          | 100         | 100         |
| 43 | 100        | 100        | 100          | 100         | 100         |
| 44 | 100        | 100        | 100          | 100         | 100         |
| 45 | 100        | 100        | 100          | 100         | 100         |
| 46 | 100        | 100        | 100          | 100         | 100         |
| 47 | 100        | 100        | 100          | 100         | 100         |
| 48 | 100        | 100        | 100          | 100         | 100         |
| 49 | 100        | 100        | 100          | 100         | 100         |
| 50 | 100        | 100        | 100          | 100         | 100         |
| 51 | 100        | 100        | 100          | 100         | 100         |
| 52 | 100        | 100        | 100          | 100         | 100         |
| 53 | 100        | 100        | 100          | 100         | 100         |
| 54 | 100        | 100        | 100          | 100         | 100         |
| 55 | 100        | 100        | 100          | 100         | 100         |
| 56 | 100        | 100        | 100          | 100         | 100         |
| 57 | 100        | 100        | 100          | 100         | 100         |
| 58 | 100        | 100        | 100          | 100         | 100         |
| 59 | 100        | 100        | 100          | 100         | 100         |
| 60 | 100        | 100        | 100          | 100         | 100         |
| 61 | 100        | 100        | 100          | 100         | 100         |
| 62 | 100        | 100        | 100          | 100         | 100         |
| 63 | 100        | 100        | 100          | 100         | 100         |
| 64 | 100        | 100        | 100          | 100         | 100         |
| 65 | 100        | 100        | 100          | 100         | 100         |
| 66 | 100        | 100        | 100          | 100         | 100         |
| 67 | 100        | 100        | 100          | 100         | 100         |
| 68 |            |            |              |             |             |





RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

Aspiration \_\_\_\_\_ Age Aged \_\_\_\_\_ Sex Males \_\_\_\_\_ Colour Black \_\_\_\_\_  
Disease Surra (by passive ingestion) \_\_\_\_\_ Date of Attack 1. 12 - 93 \_\_\_\_\_ Result Cured \_\_\_\_\_ Register No LXXXXIX \_\_\_\_\_ Ward \_\_\_\_\_



Total Urea \_\_\_\_\_ Urine passed \_\_\_\_\_  
Water taken \_\_\_\_\_ Temperature \_\_\_\_\_  
Haematocrit \_\_\_\_\_

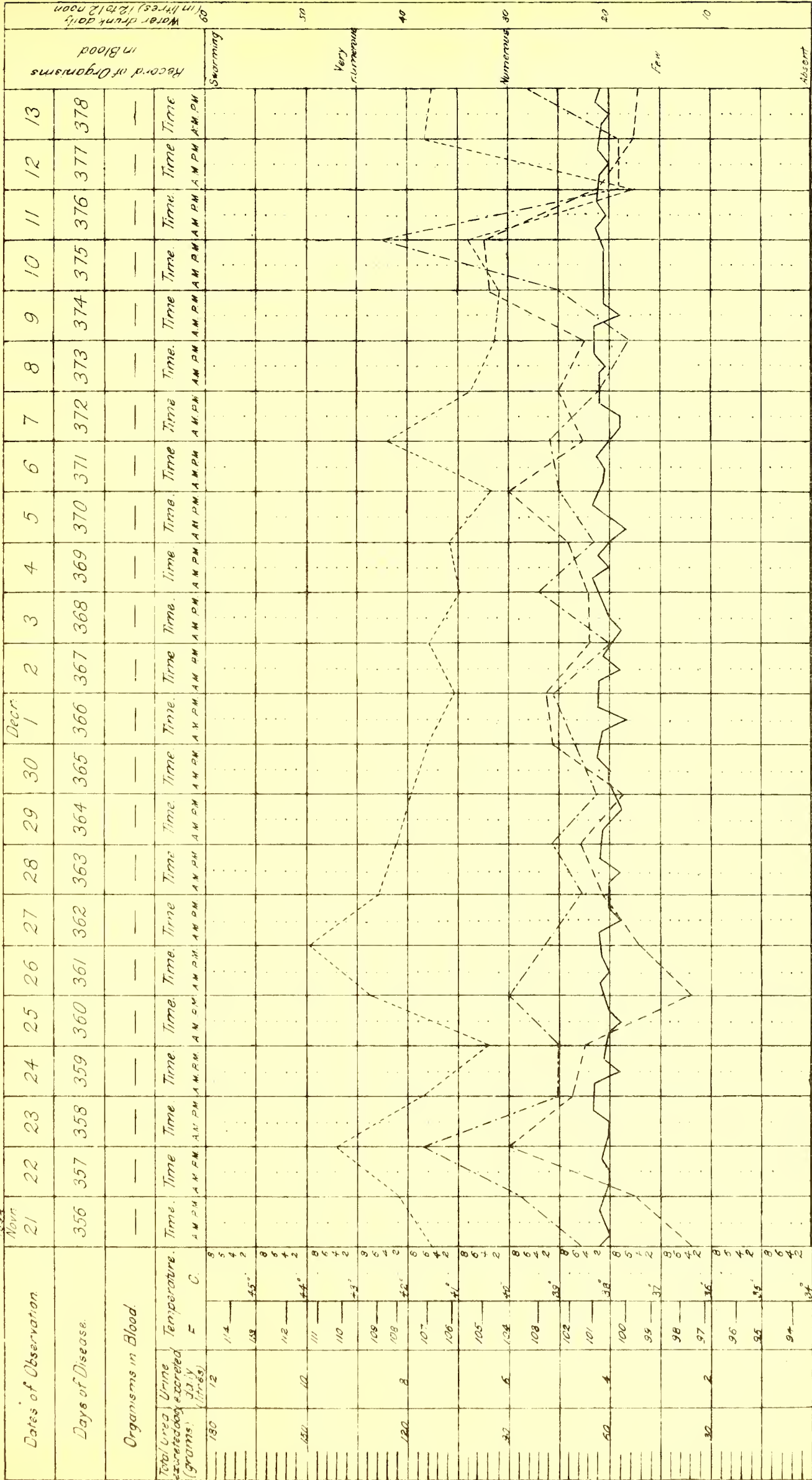
Drawn & Litho: Geo. Proctor, Inc. New York, N.Y.





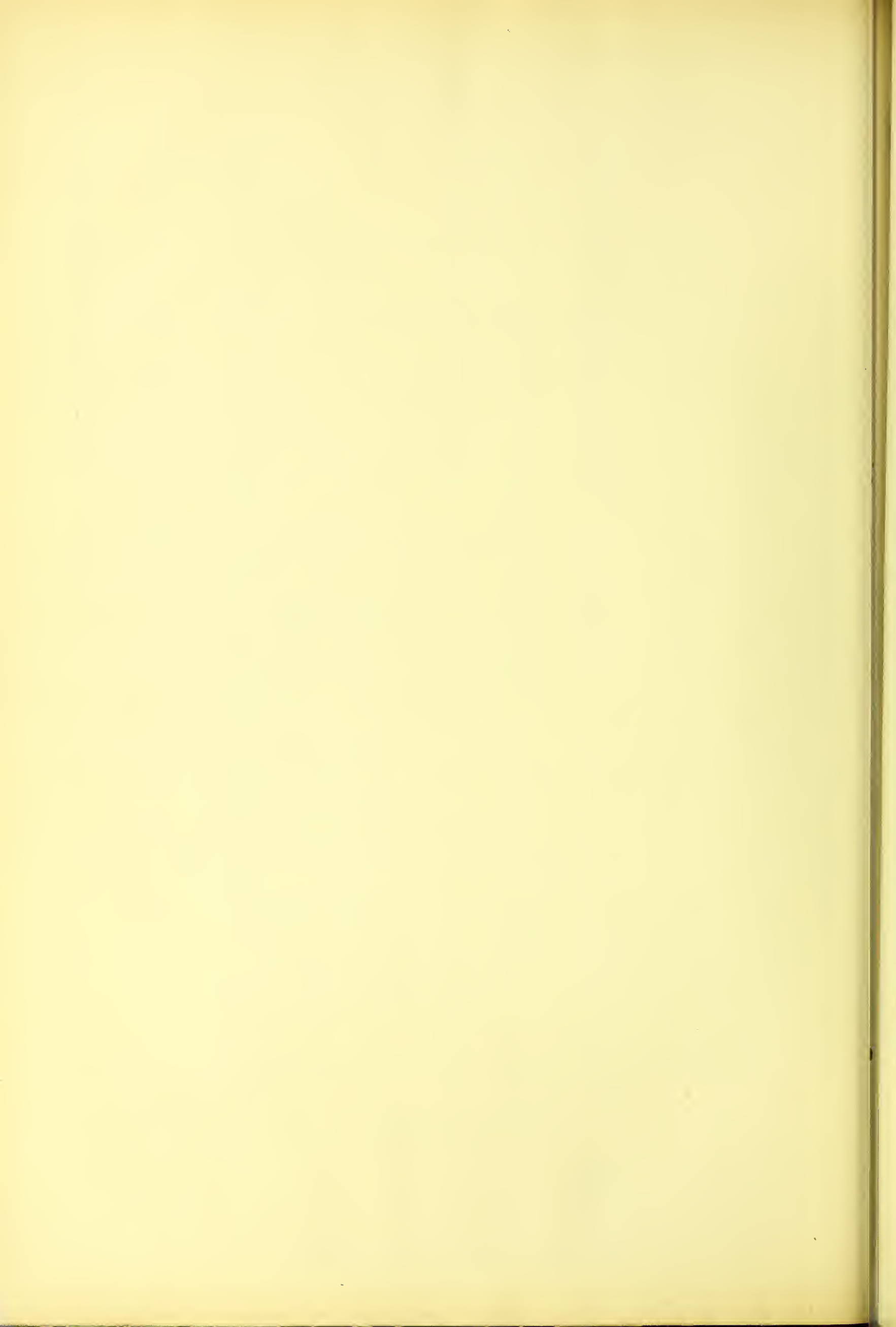
RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

Australian \_\_\_\_\_ Age. Aged \_\_\_\_\_ Sex. Gelding \_\_\_\_\_ Colour Black \_\_\_\_\_  
Disease Surra (by gastric ingestion) \_\_\_\_\_ Date of Attack. 1-12-93 \_\_\_\_\_ Result. Cured \_\_\_\_\_ Register No LXXXIX \_\_\_\_\_ Ward. \_\_\_\_\_



Urine passed during 24 hours \_\_\_\_\_  
Temperature \_\_\_\_\_  
Hematocrit \_\_\_\_\_

Total Urea \_\_\_\_\_  
Water drunk during 24 hours \_\_\_\_\_









TABLE

Showing the average daily Urea, Urine, and Water drunk, with the ratio of Urea to Urine, and Urine to Water in periods of 7 days during health, disease, treatment, and after cure.

| Periods of Health and Disease.                                   | Average daily Urea. | Average daily Urine. | Average daily Water drunk. | Ratio of Urea to Urine. | Ratio of Urine to Water. | Average daily Dung. | Periods of Health and Disease.                              | Average daily Urea. | Average daily Urine. | Average daily Water drunk. | Ratio of Urea to Urine. | Ratio of Urine to Water. | Average daily Dung. |
|--|---------------------|----------------------|----------------------------|-------------------------|--------------------------|---------------------|---|---------------------|----------------------|----------------------------|-------------------------|--------------------------|---------------------|
|  | Grammes.            | Litres.              | Litres.                    |                         |                          | Kilo-grammes.       | Intermission weeks.   | Grammes.            | Litres.              | Litres.                    |                         |                          | Kilo-grammes.       |
| Days Health.<br>6 days ...                                       | 21.42               | 1.255                | 14.44                      | 1 : 58.50               | 1 : 11.50                | ...                 | 25° ...   | 91.04               | 4.949                | 5.46                       | 1 : 54.36               | 1 : 1.10                 | ...                 |
| Latent Period.<br>6 days ...                                     | 19.71               | 1.364                | 13.87                      | 1 : 69.22               | 1 : 10.16                | ...                 | 29° ...   | 81.69               | 4.631                | 13.59                      | 1 : 57.30               | 1 : 2.90                 | ...                 |
| Paroxysm.<br>5 days ...  | 52.90               | 1.892                | 15.96                      | 1 : 35.80               | 1 : 8.43                 | ...                 | 30° ...   | 88.82               | 6.214                | 13.84                      | 1 : 69.96               | 1 : 2.23                 | ...                 |
| Intermission weeks.  |                     |                      |                            |                         |                          |                     | 31° ...   | 53.94               | 6.110                | 6.59                       | 1 : 107.30              | 1 : 1.08                 | 15.45               |
| Days. 60   |                     |                      |                            |                         |                          |                     | 32° ...   | 68.90               | 6.609                | 11.08                      | 1 : 95.90               | 1 : 1.68                 | 18.47               |
| 45 grains of Arsenic administered.                               |                     |                      |                            |                         |                          |                     | 33° ...   | 84.90               | 6.338                | 15.39                      | 1 : 75.24               | 1 : 2.41                 | 21.37               |
| 1° ...   | 33.61               | 1.070                | 16.04                      | 1 : 31.80               | 1 : 14.98                | ...                 | 34° ...   | 84.28               | 8.043                | 13.35                      | 1 : 95.43               | 1 : 1.66                 | 19.77               |
| 2° ...   | 30.89               | 1.443                | 20.03                      | 1 : 46.40               | 1 : 13.98                | ...                 | 35° ...   | 103.93              | 7.908                | 16.37                      | 1 : 76.08               | 1 : 2.07                 | 17.40               |
| 3° ...   | 36.43               | 1.801                | 21.66                      | 1 : 49.40               | 1 : 12.02                | ...                 | 36° ...   | 84.52               | 6.580                | 17.26                      | 1 : 77.85               | 1 : 2.62                 | 19.13               |
| 4° ...   | 29.99               | 1.797                | 14.66                      | 1 : 59.92               | 1 : 8.16                 | ...                 | 37° ...   | 145.46              | 6.739                | 15.39                      | 1 : 45.92               | 1 : 2.28                 | 16.20               |
| 5° ...   | 20.98               | 1.418                | 16.77                      | 1 : 67.60               | 1 : 11.83                | ...                 | 38° ...   | 96.53               | 5.344                | 19.29                      | 1 : 55.36               | 1 : 3.61                 | 18.24               |
| 6° ...   | 21.86               | 1.630                | 18.08                      | 1 : 74.60               | 1 : 11.69                | ...                 | 39° ...   | 81.59               | 6.451                | 20.76                      | 1 : 79.07               | 1 : 3.22                 | 19.35               |
| 7° ...   | 23.57               | 1.692                | 12.29                      | 1 : 71.78               | 1 : 7.28                 | ...                 | 40° ...   | 82.97               | 5.71                 | 24.35                      | 1 : 70.77               | 1 : 4.15                 | 21.65               |
| 8° ...   | 23.31               | 1.336                | 16.29                      | 1 : 57.30               | 1 : 12.19                | ...                 | 41° ...   | 75.93               | 6.111                | 20.52                      | 1 : 80.49               | 1 : 3.36                 | 20.64               |
| 9° ...   | 44.51               | 1.842                | 20.09                      | 1 : 41.36               | 1 : 10.90                | ...                 | 42° ...   | 79.54               | 6.479                | 22.31                      | 1 : 81.45               | 1 : 3.44                 | 22.31               |
| 4 } 45 grains of Arsenic administered.                           |                     |                      |                            |                         |                          |                     | 43° ...   | 92.37               | 8.000                | 22.67                      | 1 : 86.60               | 1 : 2.33                 | 25.36               |
| 3 } 182.275 c.c. of Iodides of Arsenic and Mercury administered. |                     |                      |                            |                         |                          |                     | 44° ...   | 89.41               | 7.200                | 24.18                      | 1 : 80.53               | 1 : 3.36                 | 23.32               |
| 10° ...  | 36.00               | 1.573                | 20.33                      | 1 : 43.70               | 1 : 12.92                | ...                 | 45° ...   | 101.56              | 7.757                | 27.9                       | 1 : 76.38               | 1 : 3.50                 | 22.69               |
| 11° ...  | 50.45               | 2.71                 | 2.68                       | 1 : 43.04               | 1 : 9.52                 | ...                 | 46° ...   | 107.52              | 7.650                | 20.34                      | 1 : 71.15               | 1 : 2.66                 | 24.63               |
| 12° ...  | 56.27               | 1.966                | 19.38                      | 1 : 34.93               | 1 : 9.85                 | ...                 | 47° ...   | 117.18              | 5.976                | 21.90                      | 1 : 50.99               | 1 : 3.66                 | 23.18               |
| 13° ...  | 121.12              | 3.030                | 18.24                      | 1 : 25.01               | 1 : 6.02                 | ...                 | 48° ...   | 112.46              | 4.843                | 23.84                      | 1 : 43.06               | 1 : 4.92                 | 22.84               |
| 14° ...  | 103.69              | 2.596                | 20.52                      | 1 : 25.04               | 1 : 7.90                 | ...                 | 49° ...   | 90.90               | 5.263                | 27.18                      | 1 : 58.41               | 1 : 5.16                 | 24.33               |
| 15° ...  | 73.77               | 2.523                | 18.40                      | 1 : 34.20               | 1 : 7.29                 | ...                 | 50° ...   | 102.79              | 5.937                | 22.45                      | 1 : 57.76               | 1 : 3.78                 | 22.24               |
| 16° ...  | 65.69               | 3.065                | 22.31                      | 1 : 46.70               | 1 : 7.28                 | ...                 | 51° ...   | 123.72              | 5.606                | 19.38                      | 1 : 45.31               | 1 : 3.43                 | 20.61               |
| 17° ...  | 73.09               | 3.523                | 23.21                      | 1 : 48.20               | 1 : 6.59                 | ...                 | 52° ...   | 115.89              | 4.726                | 22.47                      | 1 : 40.77               | 1 : 4.75                 | 21.98               |
| 18° ...  | 109.33              | 4.376                | 22.15                      | 1 : 40.02               | 1 : 5.06                 | ...                 | 53° ...   | 102.84              | 5.093                | 26.95                      | 1 : 49.53               | 1 : 5.29                 | 23.91               |
| 19° ...  | 113.45              | 4.617                | 23.53                      | 1 : 40.69               | 1 : 5.09                 | ...                 | 54° ...   | 102.02              | 5.174                | 21.99                      | 1 : 50.71               | 1 : 4.23                 | 24.18               |
| 20° ...  | 111.45              | 4.357                | 15.55                      | 1 : 39.10               | 1 : 3.57                 | ...                 | 55° ...   | 119.2               | 5.834                | 24.43                      | 1 : 48.98               | 1 : 4.18                 | 22.74               |
| 21° ...  | 84.07               | 3.517                | 14.25                      | 1 : 41.80               | 1 : 4.05                 | ...                 | 56° ...   | 100.08              | 5.664                | 22.07                      | 1 : 56.59               | 1 : 3.89                 | 23.03               |
| 22° ...  | 91.51               | 3.447                | 11.24                      | 1 : 37.70               | 1 : 3.26                 | ...                 | During administration of Arsenic...                         | 28.71               | 1.543                | 17.18                      | 1 : 53.76               | 1 : 11.13                | ...                 |
| 23° ...  | 81.76               | 4.611                | 14.58                      | 1 : 49.00               | 1 : 3.63                 | ...                 | During administration of Iodides of Arsenic and Mercury ... | 86.53               | 3.162                | 18.06                      | 1 : 36.54               | 1 : 5.71                 | ...                 |
| 24° ...  | 92.69               | 5.106                | 13.52                      | 1 : 55.00               | 1 : 2.37                 | ...                 | During period without Treatment ...                         | 94.91               | 6.026                | 18.78                      | 1 : 63.49               | 1 : 3.12                 | 21.36               |
| 5 } 182.275 c.c. of Iodides of Arsenic and Mercury administered. |                     |                      |                            |                         |                          |                     | During the whole period. ...                                | 80.33               | 4.437                | 18.19                      | 1 : 55.23               | 1 : 4.09                 | ...                 |
| 2 } 25° ...  | 99.62               | 3.785                | 7.69                       | 1 : 56.72               | 1 : 2.03                 | ...                 |   |                     |                      |                            |                         |                          |                     |
| 26° ...  | 90.01               | 5.106                | 13.68                      | 1 : 48.72               | 1 : 2.68                 | ...                 |   |                     |                      |                            |                         |                          |                     |
| 27° ...  | 88.08               | 4.291                | 15.06                      | 1 : 48.72               | 1 : 3.51                 | ...                 |   |                     |                      |                            |                         |                          |                     |
|  | 73.99               | 4.873                | 12.91                      | 1 : 65.90               | 1 : 2.64                 | ...                 |   |                     |                      |                            |                         |                          |                     |

*Remarks:*—This animal was subjected to treatment by Arsenic immediately on the appearance of Surra hæmatozoon. The Surra organism appeared on 1st December 1893, and disappeared from the blood on the 6th December, after which date it did not recur, although careful microscopical examinations of the blood were continued daily for a total period of 409 days. The Arsenical treatment was carried on for sixty days, when the Double Iodides of Arsenic and Mercury were substituted and administered for a further period of 106 days. In all, 454 grains of Arsenic and 1,822.75 of the solution of the Double Iodides were given. The latter corresponds to Arsenic 48.66 grains, Mercury 127.59 grains and Iodine 401.00 grains, or 288 grains of each of Iodide of Arsenic and Iodide of Mercury.

It will be noticed on reference to Photograph No. I. page that on the fiftieth (50th) day of the disease the animal was in poor condition, and had lost a total of 273 lbs. which, however, it fully recovered, but not until seven months after the commencement of the disease, when it weighed 1,070.1 lbs.

The physiological problems relating to the ingestion and egestion of Nitrogen, water, &c., will be fully discussed in Vol. III with the results of numerous other experimental cases. A few remarks on the Nitrogen question, with reference to this case, are here recorded.

(a) The small amount of urine and urea excreted during the period of health (*i. e.*) previous to inoculation, viz.,—a daily average of 1.255 litres and 21.42 grammes respectively.

(b) A slight decrease of urea during the latent period, with a corresponding increase in the quantity of urine.

(c) A great increase of urea with only a slight increase of urino during the paroxysm.

(d) A small excretion of urea and urine during the sixty days of Arsenical treatment, averaging daily only 28.71 grammes urea, and 1.543 litres urine.

(e) The striking increase of both urea and urine during the administration of the Double Iodides, amounting to 86.53 grammes, and 3.162 litres respectively.

(f) And again a still greater increase, especially with regard to the urino, after the exhibition of the drugs had ceased, a period of 226 days.

The ratio of excretion of urea and urine during the periods above noted in this case is as follows:—

|                         | Urea. | Urine. |
|-------------------------|-------|--------|
| Health ...              | 1.08  | 1.00   |
| Latent Period ...       | 1.00  | 1.08   |
| Paroxysm ...            | 2.67  | 1.50   |
| Arsenical Treatment ... | 1.45  | 1.23   |
| Double Iodide do. ...   | 4.38  | 2.52   |
| After Treatment ...     | 4.81  | 4.80   |



The average amount of urea and urine excreted daily for the whole period of health and disease, viz., 409 days, corresponds closely with that given as the average for horses at work, in England, viz., 80·33 grammes urea, and 4·437 litres urine.

HORSE No. XCVI.

Entire C. B., aged, in somewhat poor condition. The animal is now free from disease, though it had a few weeks previously been suffering from slight fever, accompanied by the ordinary symptoms. The appetite is good and the excreta normal in appearance.

The following experiment was undertaken with a view to determine as in the previous case No. LXXXIX:—

(i) Whether the administration of Arsenic immediately upon the appearance of the Surra hæmatozoon would prove destructive to the organism, when the disease was contracted by gastric ingestion of blood, in a manner somewhat similar to that in which it ordinarily occurs in nature.

(ii) The ratio between the quantity of water drunk, irrespective of the amount of fodder, and quantity of urine passed during 24 hours.

(iii) The excretion of Nitrogen as Hippuric Acid and Urea, during the periods of health, latent period of the disease, paroxysms and intermissions, the animal being under treatment during the two latter periods.

| Date.    |       | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Medicine Arsenic (Grains). | REMARKS.  |
|----------|-------|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------------------------|---|
|          |       |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |                            |   |
| 1893.    |       |                 |                 |        |        |        |      |              |      |                     |                            |   |
| October  | 18... | ...             | 36.5            | 37.4   | 38.2   | 40     | 44   | 16           | 16   | ...                 | A.M. P.M.                  | 18th, 3 P.M.—Administered by mouth 4 ozs. of blood containing very numerous hæmatozoa taken from the jugular vein of Horse No. XCV immediately after death. |
| "        | 19... | ...             | 36.4            | 37.0   | 38.2   | 44     | 32   | 12           | 16   | Absent.             | ...                        | 19th.—Condition unchanged.  |
| "        | 20... | ...             | 36.4            | 36.8   | 37.5   | 28     | 36   | 12           | 16   | ...                 | ...                        | 20th.— Do. do.  |
| "        | 21... | ...             | 35.6            | 36.1   | 37.0   | 28     | 36   | 12           | 12   | ...                 | ...                        | 21st.— Do. do.  |
| "        | 22... | ...             | 36.2            | 36.8   | 37.2   | 32     | 32   | 12           | 16   | ...                 | ...                        | 22nd.— Do. do.  |
| "        | 23... | ...             | 36.4            | 37.0   | 37.7   | 28     | 36   | 8            | 16   | ...                 | ...                        | 23rd.— Do. do.  |
| "        | 24... | ...             | 36.0            | 36.6   | 37.7   | 48     | 36   | 12           | 16   | ...                 | ...                        | 24th.— Do. do.  |
| "        | 25... | ...             | 35.8            | 37.7   | 37.5   | 28     | 36   | 12           | 16   | ...                 | ...                        | 25th.—There are petechiæ on the right conjunctiva, which membrane is injected; left, clear but yellow. The nasal septum is petechiated.                     |
| "        | 26... | 1               | 37.3            | 38.3   | 39.1   | 36     | 36   | 12           | 12   | Few                 | ...                        | iv 26th.—Animal dull, but appetite good, injection of conjunctivæ unchanged.  |
| "        | 27... | 2               | 38.5            | 40.1   | 40.6   | 32     | 56   | 12           | 28   | Very numerous.      | iv                         | iv 27th.— Conjunctivæ injected; right; petechiated; other visible mucous membranes also injected; testicles swollen.  |
| "        | 28... | 3               | 38.8            | 39.5   | 39.6   | 36     | 52   | 16           | 28   | Swarming            | v                          | v 28th.— Both conjunctivæ petechiated; general condition unchanged.   |
| "        | 29... | 4               | 38.1            | 38.0   | 38.6   | 48     | 56   | 24           | 16   | "                   | v                          | v 29th.— Animal gradually losing flesh. Conjunctivæ injected and petechiated.   |
| "        | 30... | 5               | 37.4            | 37.2   | 37.7   | 56     | 48   | 24           | 28   | Very numerous.      | vi                         | vi 30th.— Animal getting weaker, but the appetite continues good.   |
| "        | 31... | 6               | 36.8            | 38.2   | 38.2   | 60     | 64   | 16           | 36   | Absent.             | vi                         | vi 31st.— Conjunctivæ still much injected and petechiated. Fæces pultaceous in character.   |
| November | 1...  | 7               | 36.6            | 37.7   | 37.8   | 44     | 52   | 16           | 20   | "                   | vi                         | vi 1st.— Do. do. do. Hind legs swollen from below hocks.  |
| "        | 2...  | 8               | 36.0            | 37.2   | 37.4   | 44     | 52   | 16           | 24   | "                   | vi                         | vi 2nd.— Do. do. do. Animal little brighter.  |
| "        | 3...  | 9               | 36.0            | 37.2   | 37.2   | 40     | 56   | 12           | 16   | "                   | vi                         | vi 3rd.—Animal brighter and stronger. Conjunctival membrane yellow and petechiated; slight discharge from the nose.   |
| "        | 4...  | 10              | 35.8            | 37.0   | 37.7   | 64     | 52   | 12           | 20   | "                   | vi                         | vi 4th.—Animal dull; general condition unchanged.   |
| "        | 5...  | 11              | 35.4            | 37.9   | 37.4   | 36     | 52   | 8            | 16   | "                   | vi                         | vi 6th.— Animal stronger; conjunctivæ still injected and petechiated, nasal mucous membrane dotted with bright red spots.                                   |
| "        | 6...  | 12              | 35.6            | 36.5   | 37.0   | 40     | 44   | 12           | 16   | "                   | vi                         | vi 7th.—General condition unchanged; discharge from the nostril continues.  |
| "        | 7...  | 13              | 35.2            | 36.6   | 37.2   | 32     | 44   | 12           | 12   | "                   | vi                         | vi 8th.— Do. do. do.  |
| "        | 8...  | 14              | 35.7            | 37.8   | 36.8   | 36     | 40   | 12           | 24   | "                   | vi                         | vi 9th.— Do. do. do.  |
| "        | 9...  | 15              | 36.4            | 36.4   | 37.0   | 40     | 44   | 12           | 12   | "                   | vi                         | vi 10th.—Animal very thin; condition of the mucous membranes unchanged.   |
| "        | 10... | 16              | 35.8            | 37.1   | 36.0   | 44     | 36   | 12           | 16   | "                   | vi                         | vi 11th, 9-30 A.M.— The animal suddenly fell. Chloroform was administered at 11-45 A.M.   |
| "        | 11... | 17              | 35.8            | ...    | ...    | 48     | ...  | 12           | ...  | "                   | ...                        | ...   |
|          |       |                 |                 |        |        |        |      |              |      |                     |                            | Death at 12-5 P.M.  |



## RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED

Chestnut C. B.

Age Aged \_\_\_\_\_ Sex Entire \_\_\_\_\_ Colour Chestnut \_\_\_\_\_

Age Aged \_\_\_\_\_ Sex Entire \_\_\_\_\_

Colour Chestnut.

Disease "Surra" (by gastric ingestion) Date of Administration 18-10-93 Result Death Date of Result 11-11-93 Register No XCVI Ward

Date of Result 11-11-93 Register No XCVI Ward

Register No XCVI—

*Value of Result 11-*

13. Result Death -

Date of Administration

Disease: "Surra" (by gastric ingestion)

| Dates of Observation               |                             | Octr          | 20            | 21    | 22    | 23    | 24    | 25    | 26    | 27    | 28    | 29    | 30    | 31    | Novr  | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
|------------------------------------|-----------------------------|---------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Days of Disease                    |                             |               |               |       |       |       |       |       | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |
| (Organisms in Blood)               |                             |               |               |       |       |       |       | F     |       | VN    | S     | VN    | VN    | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     | —     |
| Total Urine excreted daily (grams) | Urine record daily (urines) | Temperature F | Temperature C | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  | Time  |
| 180                                | 12                          | 104           | 40            | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  |
|                                    |                             | 103           | 39            | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  |
|                                    |                             | 102           | 38            | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  |
|                                    |                             | 101           | 37            | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  |
|                                    |                             | 100           | 36            | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM |
|                                    |                             | 99            | 35            | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM |
|                                    |                             | 98            | 34            | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  |
|                                    |                             | 97            | 33            | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  |
|                                    |                             | 96            | 32            | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  |
|                                    |                             | 95            | 31            | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  |
|                                    |                             | 94            | 30            | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM |
|                                    |                             | 93            | 29            | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM |
|                                    |                             | 92            | 28            | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  |
|                                    |                             | 91            | 27            | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  |
|                                    |                             | 90            | 26            | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  |
|                                    |                             | 89            | 25            | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  |
|                                    |                             | 88            | 24            | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM |
|                                    |                             | 87            | 23            | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM |
|                                    |                             | 86            | 22            | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  |
|                                    |                             | 85            | 21            | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  |
|                                    |                             | 84            | 20            | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  |
|                                    |                             | 83            | 19            | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  |
|                                    |                             | 82            | 18            | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM |
|                                    |                             | 81            | 17            | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM |
|                                    |                             | 80            | 16            | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  |
|                                    |                             | 79            | 15            | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  |
|                                    |                             | 78            | 14            | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  |
|                                    |                             | 77            | 13            | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  |
|                                    |                             | 76            | 12            | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM |
|                                    |                             | 75            | 11            | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM |
|                                    |                             | 74            | 10            | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  |
|                                    |                             | 73            | 9             | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  |
|                                    |                             | 72            | 8             | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  |
|                                    |                             | 71            | 7             | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  |
|                                    |                             | 70            | 6             | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM |
|                                    |                             | 69            | 5             | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM |
|                                    |                             | 68            | 4             | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  |
|                                    |                             | 67            | 3             | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  |
|                                    |                             | 66            | 2             | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  |
|                                    |                             | 65            | 1             | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  |
|                                    |                             | 64            | 0             | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM |
|                                    |                             | 63            | 0             | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM |
|                                    |                             | 62            | 0             | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  |
|                                    |                             | 61            | 0             | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  |
|                                    |                             | 60            | 0             | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  |
|                                    |                             | 59            | 0             | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  |
|                                    |                             | 58            | 0             | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM |
|                                    |                             | 57            | 0             | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM |
|                                    |                             | 56            | 0             | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  |
|                                    |                             | 55            | 0             | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  |
|                                    |                             | 54            | 0             | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  |
|                                    |                             | 53            | 0             | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  |
|                                    |                             | 52            | 0             | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM |
|                                    |                             | 51            | 0             | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM |
|                                    |                             | 50            | 0             | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  |
|                                    |                             | 49            | 0             | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  |
|                                    |                             | 48            | 0             | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  |
|                                    |                             | 47            | 0             | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  |
|                                    |                             | 46            | 0             | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM |
|                                    |                             | 45            | 0             | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM |
|                                    |                             | 44            | 0             | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  | 8 AM  |
|                                    |                             | 43            | 0             | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  | 6 AM  |
|                                    |                             | 42            | 0             | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  | 4 AM  |
|                                    |                             | 41            | 0             | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  | 2 AM  |
|                                    |                             | 40            | 0             | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM | 12 PM |
|                                    |                             | 39            | 0             | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM | 10 AM |       |       |       |       |       |       |       |       |       |       |       |       |

Drawn & Litho Geo. Phoenix & Son, New York 1894

Urine passed during

24 hours \_\_\_\_\_  
Temperature \_\_\_\_\_

*Hymenozoa*

\* 13<sup>th</sup> Oct: 33 4oz of blood, containing very numerous Hematozoa taken from Horse XCV. Normalized. Immediately a few deaths were administered.

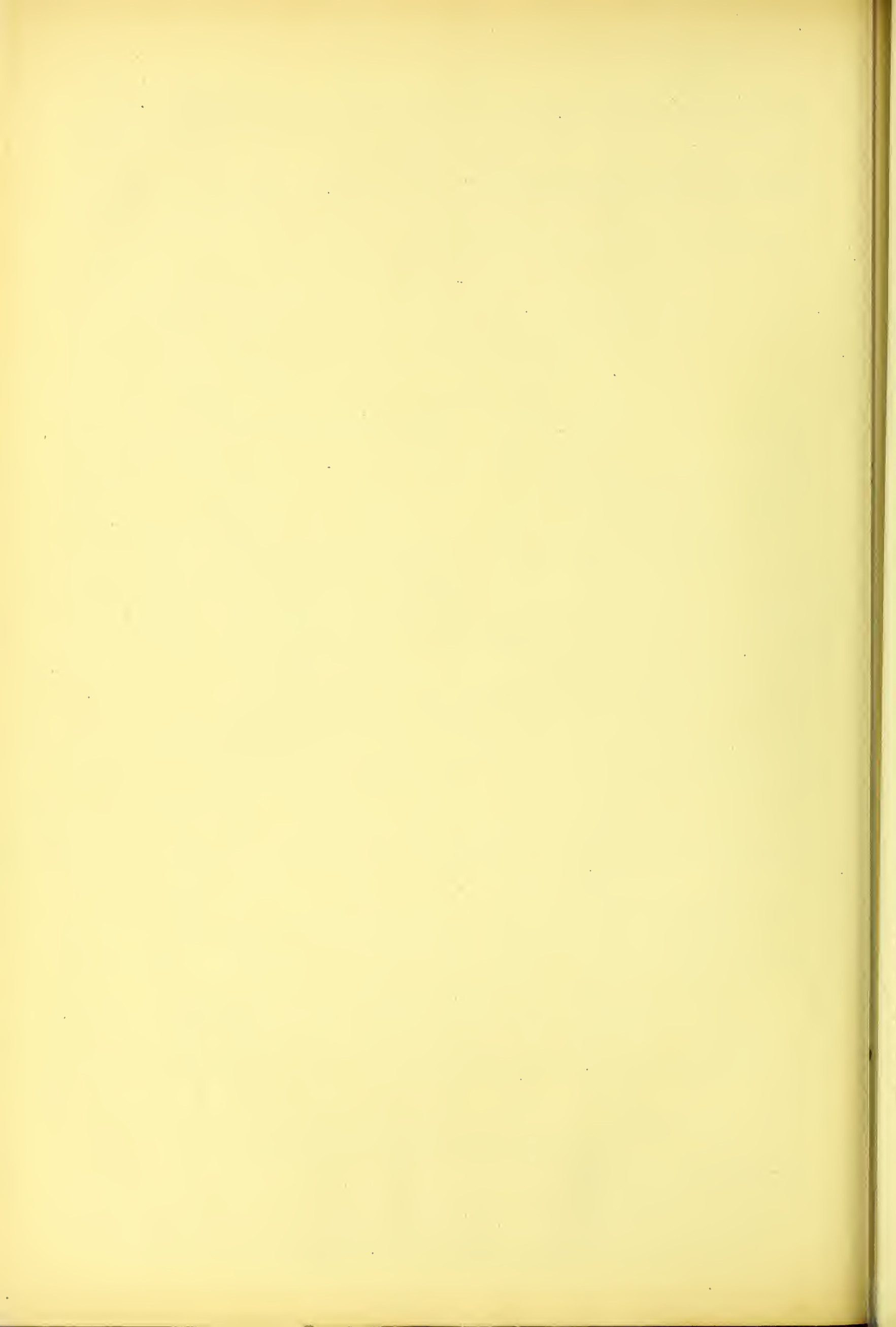




Table showing the amount and constituents of the daily urine throughout the different periods of Disease and Treatment.

| Date.               | Quantity of urine collected c. c. | Reaction. | Specific Gravity. | Albumen. | Phosphates. | Hippuric Acid Grammes. | Urea, Grammes per 100 c.c. | Total Urea excreted in the Urine during 24 hours, Grammes. | Water drunk daily 12 to 12 (noon), | Ratio of Urine passed to Water drunk daily. | Average in Periods of Health and Disease. | Temperature in Shade °F. |          | Humidity. | Hæmatozoa in the Blood. |
|---------------------|-----------------------------------|-----------|-------------------|----------|-------------|------------------------|----------------------------|--|------------------------------------|---|---|--------------------------|----------|-----------|-------------------------|
|                     |                                   |           |                   |          |             |                        |                            |  |                                    |   |   | Maximum.                 | Minimum. |           |                         |
| 1893.               |                                   |           |                   |          |             |                        |                            |  |                                    |   |   |                          |          |           |                         |
| October, 18...      | ...                               | ...       | ...               | ...      | ...         | ...                    | ...                        | ...  | Pints, Litres,                     | ...   | ...                                       | ...                      | ...      | ...       | Blood healthy.*         |
| " 19...             | 1,800                             | Alkaline. | 1,054             | Nil...   | Nil...      | 20.6                   | 4.80                       | 86.40  | 34=19.04                           | 1: 10.57                                    | ...                                       | 89.5                     | 60.4     | 54        | Absent.                 |
| " 20...             | 720                               | "         | 1,046             | "        | "           | 12.24                  | 5.24                       | 37.72  | 33=18.48                           | 1: 25.68                                    | ...                                       | 90.0                     | 57.4     | 58        | "                       |
| " 21...             | 5,090                             | "         | 1,022             | "        | "           | 0.00                   | 2.0                        | 106.89   | 41½=13.50                          | 1: 4.61                                     | ...                                       | 90.0                     | 57.9     | 66        | "                       |
| " 22...             | 2,950                             | "         | 1,032             | "        | "           | 5.09                   | 2.70                       | 82.60  | 33½=19.10                          | 1: 6.47                                     | 1: 9.54                                   | 89.5                     | 57.4     | 55        | "                       |
| " 23...             | 2,640                             | "         | 1,052             | "        | "           | 4.05                   | 3.70                       | 97.68  | 31=17.36                           | 1: 6.57                                     | ...                                       | 89.0                     | 56.9     | 54        | "                       |
| " 24...             | 2,640                             | "         | 1,054             | "        | "           | 44.88                  | 3.00                       | 79.20  | 32½=18.20                          | 1: 6.89                                     | ...                                       | 88.0                     | 57.4     | 49        | "                       |
| " 25...             | 3,000                             | "         | 1,048             | "        | "           | 36.00                  | 3.00                       | 90.00  | 32=17.92                           | 1: 5.67                                     | ...                                       | 89.5                     | 59.4     | 65        | "                       |
| " 26...             | 3,420                             | "         | 1,046             | "        | "           | 23.94                  | 3.20                       | 109.44   | 45=25.20                           | 1: 7.10                                     | ...                                       | 89.5                     | 57.9     | 69        | Few.                    |
| " 27...             | 5,500                             | "         | 1,018             | "        | "           | ...                    | 2.35                       | 129.25   | 31=19.04                           | 1: 3.46                                     | ...                                       | 89.0                     | 58.4     | 59        | Very numerous.          |
| " 28...             | 4,310                             | "         | 1,042             | Trace.   | "           | ...                    | 4.50                       | 193.95   | 44=24.71                           | 1: 5.73                                     | 1: 4.75                                   | 89.5                     | 59.4     | 65        | Swarming.               |
| " 29...             | 5,040                             | "         | 1,042             | Nil...   | "           | ...                    | 5.20                       | 262.08   | 34=19.04                           | 1: 3.77                                     | ...                                       | 89.5                     | 59.9     | 66        | Very numerous.          |
| " 30...             | 5,240                             | "         | 1,042             | "        | "           | ...                    | 5.10                       | 277.24   | 32=17.92                           | 1: 3.42                                     | ...                                       | 88.0                     | 57.4     | 52        | Very numerous.          |
| " 31...             | 4,210                             | "         | 1,040             | "        | "           | ...                    | 5.10                       | 214.71   | 34=19.04                           | 1: 4.52                                     | ...                                       | 88.0                     | 55.9     | 48        | Absent.                 |
| November 1...       | 3,170                             | "         | 1,044             | Trace.   | "           | 32.87                  | 5.20                       | 164.84   | 34=13.04                           | 1: 6.00                                     | ...                                       | 87.0                     | 56.4     | 49        | "                       |
| " 2...              | 3,450                             | "         | 1,014             | Nil...   | "           | 3.45                   | 4.90                       | 169.05   | 34=19.04                           | 1: 5.52                                     | ...                                       | 86.5                     | 56.4     | 40        | "                       |
| " 3...              | 2,300                             | "         | 1,058             | "        | "           | 4.40                   | 4.60                       | 105.80   | 33=18.48                           | 1: 8.03                                     | 1: 7.77                                   | 87.0                     | 55.4     | 41        | "                       |
| " 4...              | 2,050                             | "         | 1,054             | "        | "           | 4.02                   | 4.70                       | 96.35  | 33½=19.10                          | 1: 9.31                                     | ...                                       | 87.5                     | 53.3     | 52        | "                       |
| " 5...              | 2,160                             | "         | 1,058             | Trace.   | "           | 41.82                  | 4.90                       | 120.54   | 34=19.04                           | 1: 7.74                                     | ...                                       | 85.5                     | 57.4     | 48        | "                       |
| " 6...              | 1,350                             | "         | 1,054             | "        | "           | 14.85                  | 4.6.                       | 62.10  | 32=17.92                           | 1: 13.27                                    | ...                                       | 85.0                     | 58.9     | 53        | "                       |
| " 7...              | 3,181                             | "         | 1,052             | "        | "           | 43.60                  | 4.40                       | 139.92   | 32=17.92                           | 1: 5.63                                     | ...                                       | 84.5                     | 69.4     | 71        | "                       |
| " 8...              | 2,375                             | "         | 1,050             | "        | "           | 40.37                  | 5.20                       | 123.50   | 34=19.04                           | 1: 8.01                                     | ...                                       | 86.0                     | 66.4     | 71        | "                       |
| " 9...              | 3,000                             | "         | 1,050             | "        | "           | 24.00                  | 4.70                       | 14.00  | 34=19.04                           | 1: 6.35                                     | 1: 5.76                                   | 86.5                     | 66.4     | 80        | "                       |
| " 10...             | 2,958                             | "         | 1,046             | "        | "           | 29.50                  | 5.40                       | 159.30   | 34=19.04                           | 1: 6.15                                     | ...                                       | 87.5                     | 64.4     | 81        | "                       |
| " 11...             | 4,700                             | "         | 1,040             | "        | "           | 0.00                   | 4.90                       | 230.30   | 17=9.52                            | 1: 2.38                                     | ...                                       | 86.5                     | 66.9     | 75        | "                       |
| Death at 12-10 P.M. |                                   |           |                   |          |             |                        |                            |  |                                    |   |   |                          |          |           |                         |

\*4 ounces of blood administered by mouth.

*Autopsy.*—Immediately after death.

The body is very emaciated.

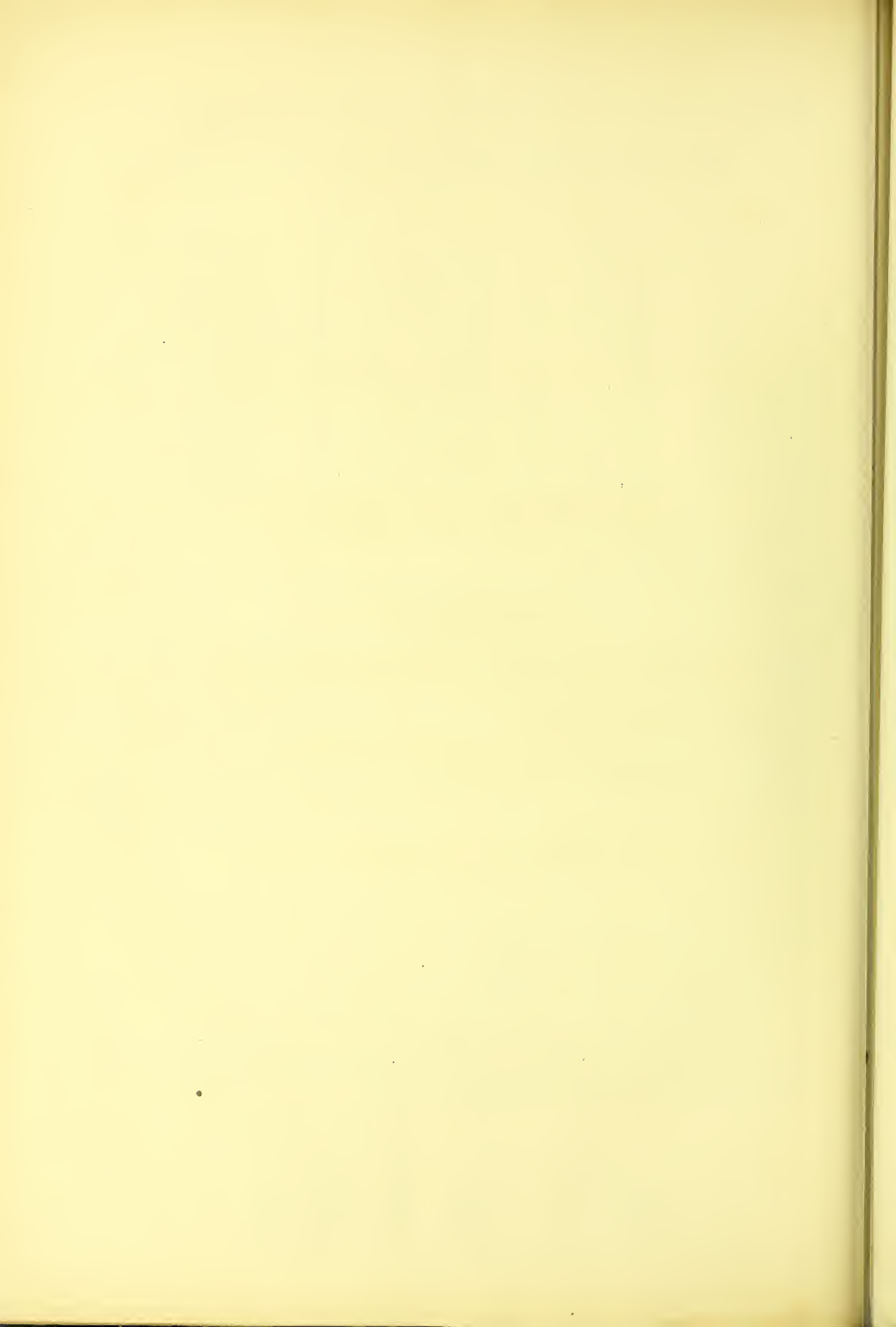
*Lungs.*—There are several subpleural extravasations on the outer border of the right organ, about one inch in diameter. *On section* the tissues of both organs are found to be the seat of a general emphysema.*Pericardial Sac*—Contains about 6 ozs. of a reddish-coloured fluid.*Heart.*—Weighs 5 lbs., 7 ozs. Tissues healthy in appearance.*Liver.*—Weighs 5 lbs., 15 ozs. The convex surface is dotted over with small yellowish-white calcareous nodules and the tissues are somewhat dark in colour. *On section* the tissues present a dark red appearance, and there are a number of calcareous nodules scattered through the substance of the organ.*Spleen.*—Weighs 1 lb. 1 oz., pale in colour, both surfaces dotted over with bright red minute spots. *On section* the tissues are soft and dark in colour.*Kidneys.*—*Right* weighs 13½ ozs, the capsule strips easily, and there are a few petechiæ on the outer border. *On section* the organ presents a healthy appearance. *Left* weighs 1 lb. ½ oz. The capsule strips easily, but there are no petechiæ visible on the surface. *On section* healthy.*Stomach.*—Contains a small amount of food. *On section* the villous portion presents a tumour, about 1" in diameter, from which on section a small quantity of red-coloured fluid exudes. The cuticular portion presents one large and several small tumours in the substance of its walls, the former contains a yellowish jelly-like substance. The coats of the stomach are contracted.*Small Intestines.*—In parts, especially in the upper portion of the gut, the capillaries are injected, but for the most part the mucous membrane presents a pale appearance.*Large Intestines.*—Present a healthy appearance.*Bladder.*—Contains 740 c.c. of a turbid, viscid and greenish yellow coloured urine. Alkaline in reaction. Specific gravity 1,040.*Remarks.*—This animal was also subjected to treatment by Arsenic immediately on the appearance of the Surra hæmatozoon. The Surra organism appeared on the 26th October, the 8th morning after inoculation, and disappeared on the morning of the 31st October, after which date it did not recur.The Arsenical treatment was carried on until death occurred on the morning of the 11th November. In all 178 grains of Arsenic in the form of *Lq. Arsenicalis* were administered.

The physiological problems bearing on the ingestion and egestion of Nitrogen, water, &amp;c., will be discussed in Vol. III together with the results of numerous other experimental cases. A few data with regard to the amount of urea, urine, and water, are here recorded.

On reference to the Chart it will be observed, that the urea curve commenced to rise two days before the first appearance of the hæmatozoon, and attained the maximum of 277 grammes of urea in the 24 hours, *i. e.*, three times the normal English excretion, three days after the temperature (10.6° C) was recorded, and did not reach the minimum of 62.10 grammes until six days after the disappearance of the organism from the blood. The daily averages of urine, urea, and water drunk during the latent period, paroxysm and intermission were as follows:—

|               | Urine c.c. | Urea, Grammes. | Water, Litres. | Ratio of Urea to Urine. |
|---------------|------------|----------------|----------------|-------------------------|
| Latent period | 2,691      | 82.93          | 19.36          | 1: 32.40                |
| Paroxysm      | 4,702      | 192.39         | 21.54          | 1: 24.40                |
| Intermission  | 2,933      | 143.95         | 18.31          | 1: 20.40                |
| Whole period  | 3,231      | 136.24         | 19.29          | 1: 23.71                |





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A.

HORSE SURRA

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APPENDIX III.

PRELIMINARY TREATMENT—SUBSEQUENT INOCULATION.

ARSENIC (*Liquor Arsenicalis*.)

HORSE No. XCVIII.

DOUBLE IODIDE OF ARSENIC AND MERCURY.

HORSES Nos. XCIX AND CIII.

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## HORSE No. XCVIII.

Bay Australian Mare, aged, cast on account of age.

*State on admission.*—The animal is in very good condition. The visible mucous membranes are clear, the skin cool. Temperature 37·80°C., Pulse 33, Respiration 15. The extremities are fine. The appetite is good and the excreta healthy in appearance.

This animal was obtained for the purpose of determining the efficacy of subjecting a healthy animal to a drug, sufficient to cause the full physiological effects, previous to submitting it to experimental inoculation with Surra. Further it was intended to prosecute several interesting problems with regard to the ingestion and excretion of Nitrogen, urine and water during health, and the course of the disease (Surra) under treatment.

| Date.       | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in the Blood | REMARKS.  |
|-------------|-----------------|--------|--------|--------|------|--------------|------|-----------------|------------------------|---|
|             | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                        |   |
| 1894.       |                 |        |        |        |      |              |      |                 |                        |   |
| March 8 ... | 37·8            | ...    | 38·2   | 26     | 23   | 9            | 24   | ...             | Blood Healthy.         |   |
| " 9 ...     | 37·8            | ...    | 38·2   | 22     | 30   | 13           | 30   | ...             | ...                    |   |
| " 10 ...    | 38·0            | ...    | 38·2   | 23     | 28   | 10           | 18   | ...             | ...                    |   |
| " 11 ...    | 38·2            | ...    | 38·1   | 32     | 32   | 18           | 20   | ...             | ...                    |   |
| " 12 ...    | 37·8            | ...    | 38·3   | 23     | 29   | 13           | 17   | ...             | ...                    |   |
| " 13 ...    | 37·8            | ...    | 38·2   | 26     | 27   | 8            | 21   | ...             | ...                    |   |
| " 14 ...    | 37·6            | ...    | 38·1   | 25     | 32   | 12           | 27   | ...             | ...                    |   |
| " 15 ...    | 38·4            | ...    | 38·2   | 32     | 27   | 23           | 22   | ...             | ...                    |   |
| " 16 ...    | 38·1            | ...    | 38·0   | 24     | 30   | 17           | 18   | ...             | ...                    |   |
| " 17 ...    | 38·1            | ...    | 38·2   | 25     | 30   | 17           | 22   | ...             | ...                    |   |
| " 18 ...    | 37·8            | ...    | 38·1   | 25     | 27   | 19           | 28   | ...             | ...                    |   |
| " 19 ...    | 38·2            | ...    | 38·2   | 27     | 29   | 15           | 22   | ...             | ...                    |   |
| " 20 ...    | 37·8            | ...    | 37·7   | 26     | 33   | 9            | 22   | ...             | ...                    |   |
| " 21 ...    | 38·0            | ...    | 37·8   | 28     | 30   | 20           | 15   | ...             | ...                    |   |
| " 22 ...    | 37·6            | ...    | 38·2   | 28     | 28   | 18           | 20   | ...             | ...                    |   |
| " 23 ...    | 37·5            | ...    | 37·8   | 26     | 36   | 17           | 28   | ...             | ...                    |   |
| " 24 ...    | 37·4            | ...    | 38·2   | 31     | 26   | 20           | 25   | ...             | ...                    |   |
| " 25 ...    | 38·0            | ...    | 38·2   | 36     | 31   | 20           | 25   | ...             | ...                    |   |
| " 26 ...    | 37·8            | ...    | 38·0   | 31     | 33   | 10           | 18   | ...             | ...                    |   |
| " 27 ...    | 37·4            | ...    | 38·2   | 23     | 31   | 11           | 24   | ...             | ...                    |   |
| " 28 ...    | 37·7            | ...    | 38·3   | 24     | 31   | 17           | 20   | ...             | ...                    | 28th.—Administration of Arsenic commenced.  |
| " 29 ...    | 37·8            | ...    | 38·0   | 28     | 32   | 14           | 32   | ...             | ...                    | 29th.—Conjunctival membranes congested, no petechiæ.                                      |
| " 30 ...    | 37·8            | ...    | 37·2   | 23     | 30   | 13           | 20   | ...             | ...                    | 30th.— Do. do.  |
| " 31 ...    | 37·8            | ...    | 38·0   | 32     | 32   | 12           | 11   | ...             | ...                    | 31st.— Do. two dark-coloured petechiæ.  |
| April 1 ... | 37·7            | ...    | 38·0   | 30     | 34   | 12           | 26   | ...             | ...                    | 1st.—Conjunctival membranes clear, no petechiæ.   |
| " 2 ...     | 37·4            | ...    | 37·8   | 32     | 34   | 15           | 30   | ...             | ...                    | 2nd.— Do. one petechia in right conjunctiva.  |
| " 3 ...     | 36·8            | ...    | 37·3   | 31     | 37   | 7            | 35   | ...             | ...                    | 3rd.— Do. faded do.   |
| " 4 ...     | 37·2            | ...    | 37·4   | 34     | 39   | 11           | 41   | ...             | ...                    | 4th.— Do. slightly congested ; animal losing flesh.                                       |
| " 5 ...     | 37·0            | ...    | 37·7   | 35     | 43   | 13           | 32   | ...             | ...                    | 5th.—Conjunctival membranes slightly congested.   |
| " 6 ...     | 37·3            | ...    | 37·4   | 38     | 41   | 23           | 48   | ...             | ...                    | 6th.— Do. anus patent, water refused.   |
| " 7 ...     | 37·4            | ...    | 37·5   | 39     | 39   | 25           | 38   | ...             | ...                    | 7th.— Do. do. do.   |
| " 8 ...     | 36·6            | ...    | 37·7   | 33     | 35   | 14           | 7    | ...             | ...                    | 8th.— Do. do. do.   |
| " 9 ...     | 37·2            | ...    | 37·7   | 33     | 40   | 8            | 39   | ...             | ...                    | 9th.—Conjunctival membranes clear, anus patent, animal losing flesh daily.                |
| " 10 ...    | 37·2            | ...    | 37·2   | 32     | 34   | 12           | 30   | ...             | ...                    | 10th.—Conjunctival membranes clear, gradual loss of flesh, anus closed.                   |
| " 11 ...    | 37·4            | ...    | 38·0   | 35     | 37   | 28           | 37   | ...             | ...                    | 11th.— Do. anus patent.   |
| " 12 ...    | 37·8            | ...    | 38·1   | 37     | 36   | 23           | 44   | ...             | ...                    | 12th.—Right conjunctiva congested. Anus closed.   |
| " 13 ...    | 38·3            | ...    | 38·2   | 45     | 40   | 29           | 37   | ...             | ...                    | 13th.—Both conjunctivæ slightly congested. Anus closed.                                   |
| " 14 ...    | 38·3            | ...    | 37·7   | 38     | 39   | 40           | 41   | ...             | ...                    | 14th.— Do. nasal septum congested.  |
| " 15 ...    | 38·3            | ...    | 38·0   | 37     | 36   | 41           | 44   | ...             | ...                    | 15th.— Do. do.  |
| " 16 ...    | 38·0            | ...    | 38·4   | 35     | 35   | 26           | 42   | ...             | ...                    | 16th.—Left conjunctiva slightly congested ; right, clear ; few swellings on the shoulder. |
| " 17 ...    | 38·0            | ...    | 37·8   | 25     | 36   | 28           | 33   | ...             | ...                    | 17th.— Do. do.  |
| " 18 ...    | 38·2            | ...    | 38·2   | 44     | 35   | 25           | 34   | ...             | ...                    | 18th.—Both conjunctivæ clear.   |
| " 19 ...    | 38·0            | ...    | 38·2   | 38     | 35   | 22           | 31   | ...             | ...                    | 19th.— Do. do.  |
| " 20 ...    | 37·9            | ...    | 38·3   | 36     | 35   | 27           | 39   | ...             | ...                    | 20th.— Do. do.  |
| " 21 ...    | 38·0            | ...    | 38·2   | 36     | 38   | 31           | 43   | ...             | ...                    | 21st.—Both conjunctivæ slightly congested ; no petechiæ.                                  |

| Date. |    |     |     | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in Blood. | REMARKS.  |
|-------|----|-----|-----|-----------------|--------|--------|--------|------|--------------|------|-----------------|---------------------|---|
|       |    |     |     | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                     |   |
| 1894. |    |     |     |                 |        |        |        |      |              |      |                 |                     |   |
| April | 22 | ... | ... | 38.0            | ...    | 38.1   | 38     | 31   | 33           | 37   | ...             | ...                 | 22nd.—Both conjunctivæ slightly congested ; no petechiæ.  |
| "     | 23 | ... | ... | 38.0            | ...    | 38.3   | 37     | 32   | 37           | 38   | ...             | ...                 | 23rd.— Do. do.  |
| "     | 24 | ... | ... | 38.3            | ...    | 38.3   | 34     | 35   | 27           | 37   | ...             | ...                 | 24th.—Both conjunctivæ very slightly congested ; no petechiæ.   |
| "     | 25 | ... | ... | 38.1            | ...    | 38.2   | 30     | 31   | 15           | 36   | ...             | ...                 | 25th.— Do. do.  |
| "     | 26 | ... | ... | 38.1            | ...    | 37.8   | 35     | 39   | 33           | 30   | ...             | ...                 | 26th.—Both conjunctivæ clear.   |
| "     | 27 | ... | ... | 37.8            | ...    | 38.2   | 35     | 34   | 21           | 38   | ...             | ...                 | 27th.— Do. do.  |
| "     | 28 | ... | ... | 37.3            | ...    | 38.4   | 33     | 37   | 24           | 39   | ...             | ...                 | 28th.— Do. do.  |
| "     | 29 | ... | ... | 37.7            | ...    | 38.4   | 33     | 36   | 15           | 33   | ...             | ...                 | 29th.—Right conjunctiva slightly congested ; left, clear.   |
| "     | 30 | ... | ... | 37.9            | ...    | 38.0   | 33     | 39   | 9            | 28   | ...             | ...                 | 30th.— Do. do.  |
| May   | 1  | ... | ... | 37.8            | ...    | 38.0   | 34     | 36   | 13           | 29   | ...             | ...                 | 1st.—Left conjunctiva three large petechiæ ; right, clear.  |
| "     | 2  | ... | ... | 37.7            | ...    | 37.6   | 28     | 33   | 14           | 31   | ...             | ...                 | 2nd.— Do. trace of petechiæ ; right, clear.   |
| "     | 3  | ... | ... | 37.7            | ...    | 37.7   | 31     | 40   | 25           | 28   | ...             | ...                 | 3rd.— Do. do.   |
| "     | 4  | ... | ... | 38.2            | ...    | 38.2   | 39     | 41   | 38           | 47   | ...             | ...                 | 4th.— Do. do.   |
| "     | 5  | ... | ... | 38.1            | ...    | 38.2   | 36     | 43   | 30           | 33   | ...             | ...                 | 5th.— Do. do.   |
| "     | 6  | ... | ... | 37.8            | ...    | 37.8   | 38     | 39   | 28           | 32   | ...             | ...                 | 6th.— Do. do.   |
| "     | 7  | ... | ... | 37.8            | ...    | 38.2   | 35     | 35   | 25           | 35   | ...             | ...                 | 7th.— Do. do.   |
| "     | 8  | ... | ... | 37.6            | ...    | 37.8   | 36     | 33   | 23           | 21   | ...             | ...                 | 8th.— Do. do.   |
| "     | 9  | ... | ... | 38.3            | ...    | 38.1   | 35     | 34   | 28           | 28   | ...             | ...                 | 9th.— Do. do.   |
| "     | 10 | ... | ... | 38.0            | ...    | 38.0   | 34     | 38   | 15           | 35   | ...             | ...                 | 10th.— Do. anus patent in evening.  |
| "     | 11 | ... | ... | 37.7            | ...    | 38.4   | 35     | 41   | 28           | 24   | ...             | ...                 | 11th.—Both conjunctivæ clear, anus closed.  |
| "     | 12 | ... | ... | 37.7            | ...    | 38.2   | 39     | 38   | 32           | 30   | ...             | ...                 | 12th.—Left conjunctiva, one extravasation, both conjunctivæ slightly congested ; eyes little dull.  |
| "     | 13 | ... | ... | 37.6            | ...    | 38.1   | 38     | 45   | 28           | 37   | ...             | ...                 |   |
| "     | 14 | ... | ... | 37.8            | ...    | 38.0   | 38     | 38   | 19           | 28   | ...             | ...                 |   |
| "     | 15 | ... | ... | 37.4            | ...    | 38.1   | 36     | 38   | 12           | 32   | ...             | ...                 |   |
| "     | 16 | ... | ... | 37.7            | ...    | 38.0   | 40     | 39   | 18           | 31   | ...             | ...                 |   |
| "     | 17 | ... | ... | 37.7            | ...    | 38.3   | 35     | 35   | 15           | 28   | ...             | ...                 |   |
| "     | 18 | ... | ... | 37.8            | ...    | 38.2   | 32     | 36   | 13           | 26   | ...             | ...                 |   |
| "     | 19 | ... | ... | 38.0            | ...    | 38.1   | 36     | 37   | 19           | 27   | ...             | ...                 |   |
| "     | 20 | ... | ... | 37.7            | ...    | 38.3   | 34     | 36   | 27           | 24   | ...             | ...                 |   |
| "     | 21 | ... | ... | 38.0            | ...    | 38.1   | 38     | 37   | 11           | 30   | ...             | Inoculated.         |   |
| "     | 22 | ... | ... | 38.1            | ...    | 38.3   | 37     | 37   | 19           | 37   | ...             | Absent.             |   |
| "     | 23 | ... | ... | 38.1            | 38.2   | 37.8   | 38     | 35   | 22           | 24   | ...             | "                   |   |
| "     | 24 | ... | ... | 38.2            | 38.3   | 38.4   | 36     | 39   | 28           | 23   | ...             | "                   |   |
| "     | 25 | ... | ... | 38.0            | 38.2   | 38.1   | 37     | 35   | 30           | 19   | ...             | "                   |   |
| "     | 26 | ... | ... | 38.6            | 38.7   | 39.4   | 36     | 47   | 20           | 31   | ...             | "                   | 26th.—Right conjunctiva, one spot ; left, clear ; swelling at seat of inoculation $4\frac{3}{4}'' \times 2\frac{3}{4}''$ , flat and tender on manipulation. |
| "     | 27 | ... | ... | 39.5            | 39.7   | 40.2   | 41     | 43   | 12           | 48   | 1               | Few.                | 27th.— Do do. slight swelling beneath abdomen.  |
| "     | 28 | ... | ... | 39.5            | 40.2   | 39.6   | 48     | 43   | 15           | 23   | 2               | Numerous.           | 28th.—Right conjunctiva yellow.   |
| "     | 29 | ... | ... | 39.0            | 39.8   | 40.1   | 41     | 43   | 19           | 32   | 3               | "                   | 29th.—Right conjunctiva yellow ; left, yellow, one extravasation ; swelling reduced, tenderness disappeared.  |
| "     | 30 | ... | ... | 39.2            | 40.1   | 39.6   | 45     | 45   | 14           | 12   | 4               | Very numerous.      | 30th.—Animal dull ; swelling at seat of inoculation disappeared.  |
| "     | 31 | ... | ... | 38.5            | 39.1   | 38.4   | 42     | 40   | 22           | 32   | 5               | Few.                | 31st.—Right conjunctiva clear, one extravasation ; left, clear. Abdominal swelling unchanged.   |
| June  | 1  | ... | ... | 38.2            | 38.5   | 38.4   | 42     | 41   | 34           | 34   | 6               | Absent.             | 1st.—Conjunctivæ clear. Animal dull and losing flesh ; pain in passing urine ; corn refused.  |
| "     | 2  | ... | ... | 38.4            | 38.5   | 38.6   | 43     | 39   | 23           | 36   | 7               | "                   | 2nd.—Slight discharge of blood from left nostril. Corn taken.   |
| "     | 3  | ... | ... | 38.8            | 38.0   | 38.2   | 40     | 38   | 29           | 31   | 8               | "                   | 3rd.—Animal dull ; conjunctivæ clear.   |
| "     | 4  | ... | ... | 38.3            | 38.2   | 38.3   | 38     | 37   | 16           | 28   | 9               | "                   | 4th.—Conjunctivæ normal, eruption on rump and thighs, and slightly on left shoulder.  |
| "     | 5  | ... | ... | 38.5            | 38.3   | 38.2   | 39     | 35   | 27           | 21   | 10              | "                   | 5th.— Do. eruption disappeared.   |
| "     | 6  | ... | ... | 38.4            | 38.2   | 38.2   | 40     | 38   | 31           | 14   | 11              | "                   | 6th.—Condition unchanged.   |
| "     | 7  | ... | ... | 39.5            | 39.0   | 39.4   | 41     | 38   | 21           | 29   | 12              | Few.                | 7th.— Do. do.   |
| "     | 8  | ... | ... | 39.8            | 39.4   | 39.1   | 23     | 37   | 8            | 21   | 13              | Numerous.           | 8th.— Do. do.   |
| "     | 9  | ... | ... | 39.3            | 40.3   | 40.5   | 39     | 43   | 15           | 17   | 14              | Very numerous.      | 9th.— Do. do.   |



| Date.   |     |     |      | Temperature °C. |        |        | Pulse. |      | Respi-<br>ration. |      | Day of<br>Disease.  | Hæmatozoa<br>in Blood.  | REMARKS. |
|---------|-----|-----|------|-----------------|--------|--------|--------|------|-------------------|------|---------------------|---|----------|
|         |     |     |      | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.              | P.M. |                     |   |          |
| 1894.   |     |     |      |                 |        |        |        |      |                   |      |                     |   |          |
| June 10 | ... | ... | 38.2 | 37.8            | 38.0   | 42     | 36     | 27   | 16                | 15   | Few.                | 10th.— Conjunctivæ faintly yellow.  |          |
| " 11    | ... | ... | 38.3 | 38.3            | 39.1   | 38     | 35     | 12   | 13                | 16   | Numerous.           | 11th.— Do. do.  |          |
| " 12    | ... | ... | 41.0 | 40.7            | 41.2   | 66     | 69     | 13   | 14                | 17   | Very nu-<br>merous. | 12th.— Do. urticarial eruption<br>on neck, side, and thighs.  |          |
| " 13    | ... | ... | 39.0 | 38.4            | 37.6   | 50     | 42     | 14   | 16                | 18   | Absent.             | 13th.— Do. eruption disappeared.  |          |
| " 14    | ... | ... | 38.2 | 38.3            | 38.3   | 44     | 41     | 12   | 15                | 19   | "                   | 14th.— Do. animal losing flesh<br>rapidly.  |          |
| " 15    | ... | ... | 38.1 | 38.1            | 38.0   | 39     | 35     | 12   | 12                | 20   | "                   | 15th.— Right conjunctiva one extra-<br>vasation; left, clear.   |          |
| " 16    | ... | ... | 38.2 | 38.2            | 38.1   | 43     | 37     | 26   | 14                | 21   | Absent.             | 16th.— Right conjunctiva traces of<br>petechiæ; left, two extravasations.   |          |
| " 17    | ... | ... | 37.8 | 38.6            | 38.8   | 36     | 40     | 9    | 12                | 22   | "                   | 17th.— Conjunctivæ clear.   |          |
| " 18    | ... | ... | 39.5 | 40.2            | 40.4   | 40     | 44     | 13   | 19                | 23   | "                   | 18th.— Do.  |          |
| " 19    | ... | ... | 40.1 | 41.1            | 41.6   | 49     | 58     | 16   | 40                | 24   | Few.                | 19th.— Right conjunctiva clear; left,<br>one spot; slight urticarial eruption<br>and two small tumours inside the<br>right thigh. |          |
| " 20    | ... | ... | 39.7 | 39.4            | 39.1   | 47     | 45     | 21   | 26                | 25   | Absent.             | 20th.—Right conjunctiva, three<br>petechiæ; left, traces. Tumours<br>disappeared.   |          |
| " 21    | ... | ... | 39.1 | 39.5            | 39.3   | 48     | 44     | 14   | 21                | 26   | "                   | 21st.—Conjunctivæ orange and pete-<br>chiated.  |          |
| " 22    | ... | ... | 39.8 | 40.2            | 40.0   | 48     | 46     | 22   | 22                | 27   | Few.                | 22nd.—Conjunctiva unchanged.<br>Mammary glands slightly swollen.  |          |
| " 23    | ... | ... | 40.2 | 40.4            | 40.5   | 53     | 57     | 23   | 27                | 28   | Nu-<br>merous.      | 23rd.—Conjunctivæ congested and<br>petechiated; mammary glands<br>slightly swollen.   |          |
| " 24    | ... | ... | 40.2 | 40.8            | 40.8   | 52     | 58     | 27   | 27                | 29   | Very nu-<br>merous. | 24th.— Do. fetlocks swollen,<br>flatulent.  |          |
| " 25    | ... | ... | 40.0 | 40.3            | 39.5   | 58     | 52     | 26   | 24                | 30   | Nu-<br>merous.      | 25th.— Do. small tumour-like<br>swelling between thighs, frequent<br>micturition.   |          |
| " 26    | ... | ... | 39.5 | 38.3            | 38.3   | 50     | 47     | 26   | 32                | 31   | Absent.             | 26th.— Do. swelling disappeared.  |          |
| " 27    | ... | ... | 38.4 | 38.6            | 38.7   | 50     | 46     | 26   | 32                | 32   | "                   | 27th.— Do. flatulence continues.  |          |
| " 28    | ... | ... | 39.3 | 39.5            | 39.6   | 50     | 52     | 28   | 27                | 33   | "                   | 28th.— Do. petechiated, yellow-<br>ness disappeared.  |          |
| " 29    | ... | ... | 39.9 | 40.0            | 40.1   | 62     | 69     | 28   | 28                | 34   | Few.                | 29th.— Do. œdema beneath<br>abdomen, flatulence continues.  |          |
| " 30    | ... | ... | 39.8 | 40.5            | 40.2   | 68     | 70     | 28   | 31                | 35   | "                   | 30th.— Do. swelling firmer on<br>manipulation. Animal weaker.   |          |
| July 1  | ... | ... | 39.4 | 39.8            | 40.2   | 66     | 48     | 13   | 16                | 36   | "                   | 1st.— Do. injected and pete-<br>chiated; œdema increased.   |          |
| " 2     | ... | ... | 39.4 | 40.1            | 40.1   | 52     | 54     | 11   | 18                | 37   | "                   | 2nd.— Do. yellow and pete-<br>chiated, œdema increased. General<br>urticarial eruption.   |          |
| " 3     | ... | ... | 39.4 | 40.0            | 39.7   | 51     | 48     | 12   | 14                | 38   | Absent.             | 3rd.— Do. swelling extended<br>to between the fore legs; eruption<br>disappearing.  |          |
| " 4     | ... | ... | 38.8 | 39.3            | 39.2   | 50     | 50     | 12   | 15                | 39   | "                   | 4th.—Right conjunctiva, three pete-<br>chiæ; left, clear. Condition un-<br>changed, eruption disappeared 6 P.M.                   |          |
| " 5     | ... | ... | 39.4 | 39.6            | 39.4   | 44     | 46     | 12   | 17                | 40   | "                   | 5th.— Do. injected; left, injected<br>and petechiated; swelling increased;<br>eruption re-appeared.                               |          |
| " 6     | ... | ... | 39.0 | 39.6            | 39.6   | 42     | 49     | 14   | 21                | 41   | "                   | 6th.—Conjunctivæ injected. Swelling<br>reduced; respirations abdominal;<br>animal weak.   |          |
| " 7     | ... | ... | 39.2 | 39.8            | 39.7   | 45     | 44     | 10   | 14                | 42   | "                   | 7th.— Do. and petechiated; swelling<br>beneath chest increased; animal weaker.  |          |
| " 8     | ... | ... | 39.3 | 39.6            | 39.3   | 47     | 50     | 18   | 14                | 43   | "                   | 8th.— Do. swelling reduced.   |          |
| " 9     | ... | ... | 39.3 | 39.4            | 39.3   | 43     | 43     | 12   | 10                | 44   | "                   | 9th.— Do. general urticarial eruption.  |          |
| " 10    | ... | ... | 39.3 | 39.2            | 39.4   | 45     | 37     | 11   | 11                | 45   | "                   | 10th.— Do. petechiated, eruption<br>disappearing and swelling less;<br>animal stronger.   |          |
| " 11    | ... | ... | 39.4 | 39.3            | 39.1   | 38     | 41     | 11   | 9                 | 46   | Few.                | 11th.— Do. eruption disappeared.  |          |
| " 12    | ... | ... | 39.2 | 39.2            | 39.0   | 39     | 41     | 10   | 11                | 47   | "                   | 12th.— Do.  |          |
| " 13    | ... | ... | 39.7 | 40.0            | 39.8   | 54     | 43     | 20   | 13                | 48   | "                   | 13th.— Do. orange and petechiated.  |          |
| " 14    | ... | ... | 38.1 | 39.1            | 39.2   | 63     | 47     | 14   | 15                | 49   | "                   | 14th.— Do. flatulence, with strain-<br>ing; animal very weak.   |          |
| " 15    | ... | ... | 38.5 | 38.8            | 39.2   | 72     | 73     | 30   | 19                | 50   | "                   | 15th.— Do. do.  |          |
| " 16    | ... | ... | 38.2 | ...             | ...    | 83     | ...    | 29   | ...               | 51   | Nu-<br>merous.      | 16th.— Do. and injected, animal very<br>weak, flatulence continues; blood in<br>urine.  |          |
| Death.  |     |     |      |                 |        |        |        |      |                   |      |                     |   |          |

Death.



July 16th, 1894—Autopsy two hours after death. The body is well nourished. There is an entire absence of swelling and oedema from the extremities and the under-surface of the abdomen.

*Thorax.*—The pleural cavities are free from fluid, and there are no pleuritic adhesions.

*Lungs.*—Are normal in appearance and well distended with air. On section tissues are normal. The pericardial Sac contains two drachms of a clear amber-coloured fluid.

*Heart.*—Weights 5 lbs. 10½ ozs. The external surface of the heart presents a healthy appearance. On section the right side of the organ contains some dark coloured blood clots, no petechiæ. The cavities on the left side contain a few small clots. There are, however, no sub-endocardial petechiæ. Valves normal. The peritoneal cavity is free from fluid.

*Liver.*—Weights 13 lbs. 3½ ozs. Capsule somewhat thickened in patches, no calcareous nodules. On section the tissues are dark in colour, but are firm.

*Spleen.*—Weights 3 lbs. 5¼ ozs., is somewhat enlarged. The capsule has a few ecchymoses dotted over its surface. On section the tissues are finer and healthy.

*Kidneys.*—Right weighs 1 lb. 14½ ozs., left weighs 1 lb. 10½ ozs. The capsule strips easily and on section the tissues appear normal in structure.

*Stomach.*—Half-full of semi-digested food. On section both portions of the organ present a normal condition.

*Intestines.*—Present a healthy appearance.

*Bladder.* Ditto.

TABLE OF URINE AND WATER—HORSE XCVIII.

| Date.      | Quantity. | Colour. | Reaction. | Specific Gravity. | Albumen. | Total Hippuric Acid excreted in Urine during 24 hours. Grammes. | Urea. Grammes per 100 c.c. | Total Urea excreted in Urine during 24 hours Grammes. | Water taken during twenty-four hours. | Ratio of Urine passed to Water taken daily. | Ratio of Urine passed to Water drunk during periods of Health and Disease. | Temperature in shade °F. |          | Humidity. | Arsenic administered daily. | Condition of Blood. |
|------------|-----------|---------|-----------|-------------------|----------|---|----------------------------|---|---------------------------------------|---|--|--------------------------|----------|-----------|-----------------------------|---------------------|
|            |           |         |           |                   |          |   |                            |   |                                       |   |  | Maximum.                 | Minimum. |           |                             |                     |
| 1894.      |           |         |           |                   |          |   |                            |   |                                       |   |  |                          |          |           |                             |                     |
| March 8... | 4,000     | Turbid  | Alkaline. | 1,042             | Nil.     | 3.20  | 1.30                       | 52.00   | Pts. Ltrs.                            | 1 : 5.70                                    |  | 96.0                     | 54.4     | 55        | ...                         | Healthy.            |
| " 9...     | 3,500     | "       | "         | 1,046             | "        | 9.70  | 1.70                       | 57.80   | 40= 22.80                             | 1 : 6.84                                    |  | 97.5                     | 59.4     | 35        | ...                         | "                   |
| " 10...    | 1,900     | "       | "         | 1,05              | "        | ...   | 1.80                       | 34.20   | 11= 6.27                              | 1 : 3.30                                    |  | 98.0                     | 57.4     | 47        | ...                         | "                   |
| " 11...    | 2,325     | "       | "         | 1,063             | "        | 11.62   | 1.88                       | 43.71   | 43= 24.51                             | 1 : 10.54                                   | 1 : 7.43   | 93.0                     | 53.9     | 37        | ...                         | "                   |
| " 12...    | 1,750     | "       | "         | 1,052             | "        | 12.25   | 1.40                       | 24.50   | 34= 19.38                             | 1 : 11.07                                   |  | 97.0                     | 58.4     | 38        | ...                         | "                   |
| " 13...    | 2,700     | "       | "         | 1,046             | "        | 59.40   | 1.20                       | 32.40   | 43= 24.51                             | 1 : 9.08                                    |  | 100.0                    | 60.9     | 27        | ...                         | "                   |
| " 14...    | 3,075     | "       | "         | 1,052             | "        | 3.07  | 1.10                       | 33.82   | 38= 21.66                             | 1 : 7.04                                    |  | 100.0                    | 68.9     | 27        | ...                         | "                   |
| " 15...    | 2,500     | "       | "         | 1,056             | "        | 2.00  | 1.00                       | 25.00   | 4 = 23.37                             | 1 : 9.35                                    |  | 101.5                    | 68.9     | 47        | ...                         | "                   |
| " 16...    | 3,300     | "       | "         | 1,056             | "        | 3.60  | 1.10                       | 36.30   | 32= 18.24                             | 1 : 5.53                                    |  | 101.0                    | 67.4     | 41        | ...                         | "                   |
| " 17...    | 2,800     | "       | "         | 1,061             | "        | 47.80   | 1.00                       | 28.00   | 30= 17.04                             | 1 : 6.08                                    |  | 99.0                     | 66.1     | 60        | ...                         | "                   |
| " 18...    | 2,400     | "       | "         | 1,056             | "        | 4.60  | 1.12                       | 26.88   | 40= 22.80                             | 1 : 9.50                                    | 1 : 7.56   | 97.5                     | 68.9     | 53        | ...                         | "                   |
| " 19...    | 1,300     | "       | "         | 1,062             | "        | 10.40   | 1.30                       | 16.90   | 39= 22.33                             | 1 : 17.10                                   |  | 99.5                     | 71.4     | 53        | ...                         | "                   |
| " 20...    | 3,600     | "       | "         | 1,039             | "        | 21.60   | 0.80                       | 28.80   | 40= 22.80                             | 1 : 6.33                                    |  | 96.5                     | 72.4     | 45        | ...                         | "                   |
| " 21...    | 4,060     | "       | "         | 1,041             | "        | 20.30   | 0.85                       | 34.51   | 43= 24.51                             | 1 : 6.04                                    |  | 87.5                     | 73.4     | 56        | ...                         | "                   |
| " 22...    | 3,400     | "       | "         | 1,044             | "        | 6.00  | 0.60                       | 20.40   | 35= 19.95                             | 1 : 5.87                                    |  | 94.5                     | 69.4     | 58        | ...                         | "                   |
| " 23...    | 4,000     | "       | "         | 1,034             | "        | 4.50  | 0.60                       | 21.00   | 35= 19.95                             | 1 : 4.99                                    | 1 : 5.40   | 99.5                     | 68.4     | 43        | ...                         | "                   |
| " 24...    | 2,420     | "       | "         | 1,052             | "        | 21.78   | 0.92                       | 22.26   | 19= 10.83                             | 1 : 4.47                                    |  | 99.0                     | 67.4     | 34        | ...                         | "                   |
| " 25...    | 4,300     | "       | "         | 1,029             | "        | 4.50  | 0.52                       | 2.36  | 37= 21.09                             | 1 : 4.90                                    |  | 103.5                    | 65.4     | 29        | ...                         | "                   |
| " 26...    | 5,280     | "       | "         | 1,034             | "        | ...   | 0.72                       | 38.01   | 41= 23.37                             | 1 : 4.42                                    |  | 103.0                    | 60.9     | 20        | ...                         | "                   |
| " 27...    | 3,200     | "       | "         | 1,051             | "        | 3.54  | 1.10                       | 35.31   | 41= 23.37                             | 1 : 7.28                                    |  | 103.0                    | 63.9     | 31        | ...                         | "                   |
| " 28...    | 4,600     | "       | "         | 1,032             | Trace    | 4.60  | 0.74                       | 31.04   | 50= 28.50                             | 1 : 6.20                                    |  | 103.5                    | 70.4     | 55        | Grains iv                   | "                   |
| " 29...    | 3,630     | "       | "         | 1,044             | Nil.     | 4.25  | 1.15                       | 41.74   | 24= 13.68                             | 1 : 3.76                                    |  | 97.5                     | 68.1     | 57        | ...                         | "                   |
| " 30...    | 2,900     | "       | "         | 1,046             | "        | 17.40   | 1.42                       | 41.18   | 39= 22.23                             | 1 : 7.66                                    |  | 94.0                     | 68.4     | 54        | ...                         | "                   |
| " 31...    | 3,500     | "       | "         | 1,044             | "        | 21.00   | 1.23                       | 42.65   | 25= 14.25                             | 1 : 4.07                                    |  | 96.0                     | 61.9     | 51        | ...                         | "                   |
| April 1... | 2,890     | "       | "         | 1,048             | "        | ...   | 1.55                       | 44.79   | 26= 14.82                             | 1 : 5.12                                    | 1 : 4.96   | 100.0                    | 65.4     | 40        | ...                         | "                   |
| " 2...     | 2,100     | "       | "         | 1,058             | "        | 4.20  | 1.85                       | 38.85   | 38= 21.66                             | 1 : 10.31                                   |  | 100.5                    | 62.4     | 32        | ...                         | "                   |
| " 3...     | 2,000     | "       | "         | 1,053             | "        | ...   | 2.10                       | 42.00   | 13= 7.41                              | 1 : 3.70                                    |  | 98.0                     | 62.4     | 22        | ...                         | "                   |
| " 4...     | 3,300     | "       | "         | 1,057             | "        | ...   | 2.31                       | 76.23   | 12= 6.84                              | 1 : 2.08                                    |  | 100.0                    | 64.4     | 40        | ...                         | "                   |
| " 5...     | 2,250     | "       | "         | 1,056             | "        | 2.25  | 1.80                       | 40.50   | 26= 14.82                             | 1 : 6.58                                    |  | 102.5                    | 74.8     | 63        | ...                         | "                   |
| " 6...     | 2,410     | "       | "         | 1,05              | "        | 2.86  | 2.00                       | 48.80   | 35= 19.95                             | 1 : 8.17                                    |  | 104.0                    | 74.3     | 66        | ...                         | "                   |
| " 7...     | 1,850     | "       | "         | 1,063             | "        | 11.10   | 2.90                       | 53.65   | 31= 17.67                             | 1 : 9.55                                    |  | 97.0                     | 68.9     | 27        | ...                         | "                   |
| " 8...     | 1,910     | "       | "         | 1,064             | "        | 11.46   | 3.10                       | 59.21   | 19= 10.38                             | 1 : 5.43                                    | 1 : 7.32   | 94.0                     | 62.9     | 36        | ...                         | "                   |
| " 9...     | 2,450     | "       | "         | 1,061             | "        | 2.80  | 2.60                       | 63.70   | 25= 14.25                             | 1 : 5.82                                    |  | 99.0                     | 62.9     | 27        | ...                         | "                   |
| " 10...    | 1,800     | "       | "         | 1,063             | "        | 3.60  | 2.70                       | 48.60   | 30= 17.04                             | 1 : 9.47                                    |  | 101.0                    | 65.4     | 52        | ...                         | "                   |
| " 11...    | 2,650     | "       | "         | 1,060             | "        | 29.15   | 2.43                       | 64.39   | 32= 18.24                             | 1 : 6.88                                    |  | 103.0                    | 64.4     | 43        | ...                         | "                   |
| " 12...    | 2,000     | "       | "         | 1,065             | "        | 34.00   | 3.15                       | 63.00   | 25= 14.25                             | 1 : 7.12                                    |  | 104.5                    | 71.4     | 30        | ...                         | "                   |
| " 13...    | 2,050     | "       | "         | 1,062             | "        | 16.40   | 3.50                       | 71.75   | 3= 1.71                               | 1 : 0.83                                    |  | 100.5                    | 70.4     | 30        | ...                         | "                   |
| " 14...    | 2,700     | "       | "         | 1,049             | "        | 4.50  | 3.10                       | 91.80   | 6= 3.42                               | 1 : 1.27                                    |  | 100.5                    | 67.9     | 58        | ...                         | "                   |
| " 15...    | 2,670     | "       | "         | 1,042             | "        | 2.67  | 3.60                       | 96.12   | 12= 6.84                              | 1 : 2.56                                    | 1 : 2.65   | 100.0                    | 70.4     | 29        | ...                         | "                   |
| " 16...    | 3,580     | "       | "         | 1,040             | "        | 0.00  | 3.00                       | 107.40  | 2= 1.14                               | 1 : 0.31                                    |  | 101.5                    | 66.4     | 28        | Grains iiss                 | "                   |
| " 17...    | 2,500     | "       | Acid.     | 1,048             | "        | 4.60  | 3.00                       | 75.00   | 20= 11.40                             | 1 : 4.56                                    |  | 100.5                    | 68.9     | 36        | ...                         | "                   |
| " 18...    | 3,000     | "       | Alka      | 1,040             | "        | 3.75  | 2.55                       | 76.50   | 18= 10.26                             | 1 : 3.42                                    |  | 102.0                    | 67.9     | 29        | ...                         | "                   |
| " 19...    | 2,280     | "       | "         | 1,047             | "        | 4.40  | 3.10                       | 70.68   | 13= 7.41                              | 1 : 3.25                                    |  | 104.5                    | 71.9     | 37        | ...                         | "                   |
| " 20...    | 2,810     | "       | "         | 1,040             | "        | 2.81  | 2.23                       | 62.66   | 14= 7.98                              | 1 : 2.84                                    |  | 103.5                    | 73.4     | 50        | ...                         | "                   |
| " 21...    | 1,350     | "       | "         | 1,046             | "        | 2.70  | 2.96                       | 39.96   | 13= 7.41                              | 1 : 5.48                                    |  | 105.5                    | 70.9     | 69        | ...                         | "                   |
| " 22...    | 2,900     | "       | "         | 1,055             | "        | 2.90  | 3.10                       | 89.90   | 12= 6.84                              | 1 : 2.36                                    |  | 104.5                    | 73.8     | 48        | ...                         | "                   |
| " 23...    | 960       | "       | "         | 1,054             | "        | 7.68  | 3.60                       | 34.56   | 29= 16.53                             | 1 : 17.22                                   | 1 : 4.93   | 105.0                    | 75.8     | 44        | ...                         | "                   |
| " 24...    | 1,250     | "       | "         | 1,047             | "        | 0.00  | 4.40                       | 55.00   | 26= 14.82                             | 1 : 11.85                                   |  | 106.5                    | 71.9     | 21        | ...                         | "                   |
| " 25...    | 2,200     | "       | "         | 1,051             | "        | 2.50  | 4.20                       | 92.40   | 12= 6.84                              | 1 : 3.11                                    |  | 107.5                    | 68.9     | 23        | ...                         | "                   |
| " 26...    | 1,500     | "       | "         | 1,049             | "        | 1.85  | 3.20                       | 48.00   | 23= 13.11                             | 1 : 8.74                                    |  | 105.0                    | 70.0     | 58        | ...                         | "                   |
| " 27...    | 2,860     | "       | "         | 1,047             | "        | 2.86  | 3.00                       | 85.80   | 14= 7.98                              | 1 : 2.79                                    |  | 103.0                    | 69.9     | 61        | ...                         | "                   |
| " 28...    | 2,900     | "       | "         | 1,041             | "        | 3.64  | 2.90                       | 84.10   | 16= 9.12                              | 1 : 3.14                                    |  | 101.5                    | 67.4     | 55        | ...                         | "                   |
| " 29...    | 2,780     | "       | "         | 1,049             | "        | 3.41  | 3.20                       | 88.96   | 16= 9.12                              | 1 : 3.28                                    | 1 : 3.44   | 97.5                     | 63.9     | 55        | ...                         | "                   |
| " 30...    | 4,260     | "       | "         | 1,042             | "        | 4.26  | 2.30                       | 97.98   | 19= 10.83                             | 1 : 2.54                                    |  | 98.5                     | 68.9     | 56        | ...                         | "                   |
| May 1...   | 1,960     | "       | "         | 1,048             | "        | 0.00  | 3.00                       | 58.80   | 12= 6.84                              | 1 : 3.49                                    |  | 98.5                     | 70.9     | 56        | ...                         | "                   |
| " 2...     | 3,100     | "       | "         | 1,052             | "        | 5.65  | 2.90                       | 89.90   | 17= 9.61                              | 1 : 3.13                                    |  | 98.0                     | 70.9     | 56        | ...                         | "                   |
| " 3...     | 2,000     | "       | "         | 1,056             | "        | 16.00   | 2.60                       | 52.00   | 25= 14.25                             | 1 : 7.12                                    |  | 104.0                    | 70.9     | 42        | ...                         | "                   |
| " 4...     | 2,400     | "       | "         | 1,046             | "        | 0.00  | 2.40                       | 57.60   | 15= 8.55                              | 1 : 3.56                                    |  | 101.0                    | 71.4     | 35        | ...                         | "                   |
| " 5...     | 4,120     | "       | "         | 1,038             | "        | Nil.  | 1.40                       | 67.68   | 18= 10.26                             | 1 : 2.49                                    |  | 104.5                    | 70.9     | 42        | ...                         | "                   |
| " 6...     | 3,280     | "       | "         | 1,043             | "        | ...   | 2.24                       | 73.47   | 10= 5.70                              | 1 : 1.73                                    | 1 : 3.17   | 104.0                    | 70.9     | 59        | ...                         | "                   |
| " 7...     | 2,930     | "       | "         | 1,047             | "        | ...   | 3.64                       | 106.63  | 18= 10.26                             | 1 : 3.50                                    |  | 100.0                    | 69.4     | 58        | ...                         | "                   |
| " 8...     | 3,350     | "       | "         | 1,047             | "        | ...   | 3.36                       | 112.56  | 14= 7.98                              | 1 : 2.38                                    |  | 97.5                     | 69.4     | 50        | ...                         | "                   |
| " 9...     | 2,400     | "       | "         | 1,046             | "        | ...   | 3.44                       | 82.56   | 14= 7.98                              | 1 : 3.32                                    |  | 98.0                     | 68.4     | 56        | ...                         | "                   |
| " 10...    | 3,450     | "       | "         | 1,041             | "        | ...   | 2.80                       | 96.60   | 15= 8.55                              | 1 : 2.48                                    |  | 98.0                     | 69.9     | 63        | ...                         | "                   |
| " 11...    | 6,070     | "       | "         | 1,034             | "        | ...   | 1.80                       | 109.26  | 12= 6.84                              | 1 : 1.13                                    |  | 100.5                    | 69.4     | 50        | ...                         | "                   |
| " 12...    | 4,000     | "       | "         | 1,040             | "        | ...   | 2.30                       | 92.00   | 19= 10.83                             | 1 : 2.71                                    |  | 99.5                     | 68.9     | 41        | ...                         | "                   |
| " 13...    | 4,300     | "       | "         | 1,036             | "        | ...   | 2.00                       | 98.00   | 16= 9.12                              | 1 : 1.86                                    | 1 : 1.88   | 100.0                    | 69.9     | 45        | ...                         | "                   |
| " 14...    | 6.6°      | "       | "         | 1,035             | "        | ...   | 1.45                       | 96.86   | 16= 9.12                              | 1 : 1.36                                    |  | 98.5                     | 72.9     | 56        | ...                         | "                   |
| " 15...    | 2,800     | "       | "         | 1,043             | "        | ...   | 3.00                       | 84.00   | 10= 5.70                              | 1 : 2.03                                    |  | 97.0                     | 70.9     | 57        | ...                         | "                   |
| " 16...    | 3,050     | "       | "         | 1,045             | "        | ...   | 3.00                       | 91.50   | 14= 7.98                              | 1 : 2.61                                    |  | 96.0                     | 67.4     | 58        | ...                         | "                   |

## RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

Australian Mare. 320.7 grains Arsenic administered in 54 days, previous to inoculation. Age. Aged. Sex. Mare. Colours. Bay.

Disease "Surra" (by subcutaneous inoculation). Date of Inoculation. 21-5-94. Results. Death. Register No. XCVIII. Ward.

[illegible]

*Oceanic Lithio. Govt. Photoducing Office*

|              |       |             |       |
|--------------|-------|-------------|-------|
| Total Urine  | ----- | Water taken | ----- |
| Urine passed | ----- | Temperature | ----- |







RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

Disease "Surra"

Australian Mare.

Age Aged Sex Mare Colour Bay

Date of Inoculation 21-5-94

Result

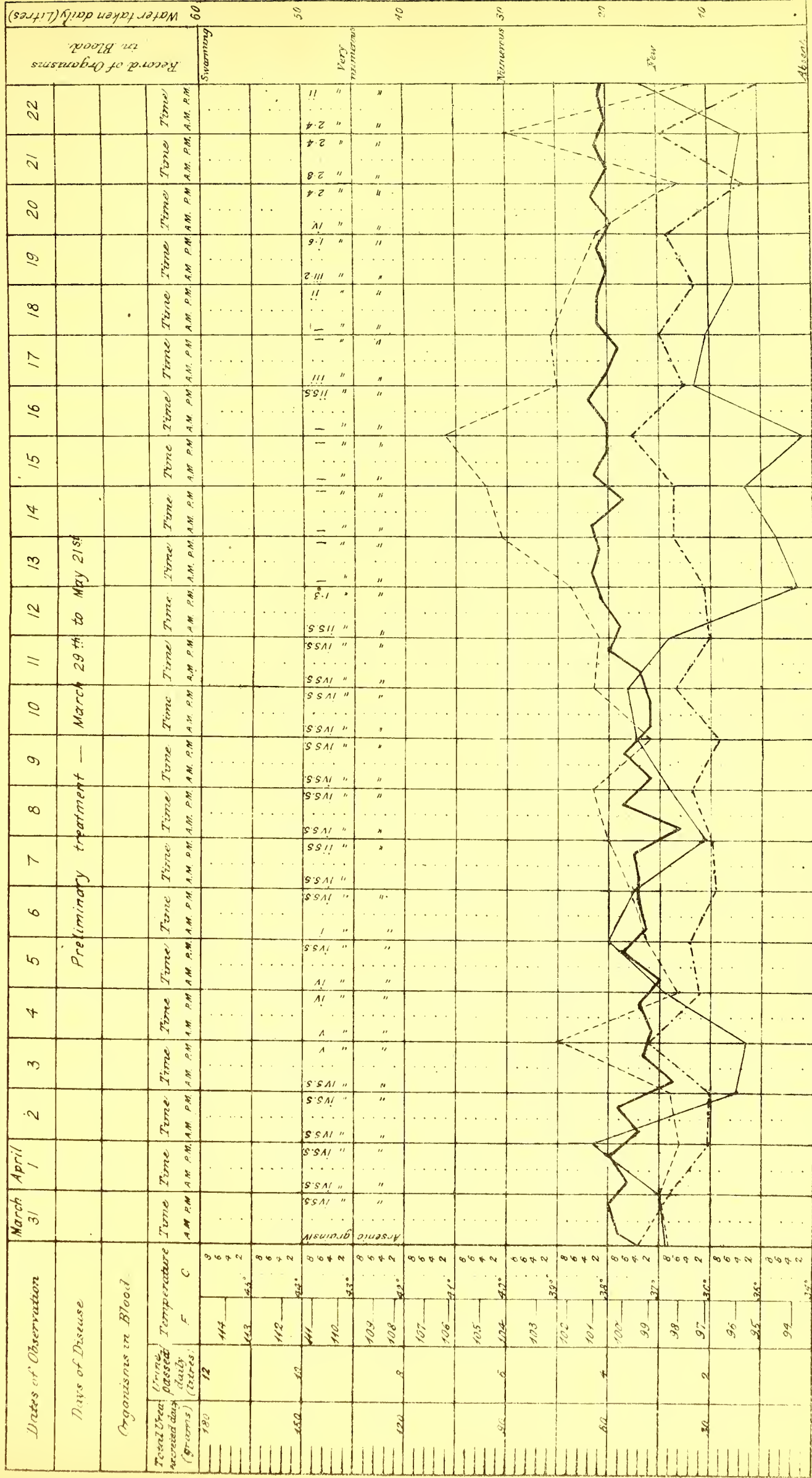
Death

Date of Result 16-7-94

Register No

XCVIII

Ward



Total Urea

Water taken

Result

Death

Date of Result 16-7-94

Register No

XCVIII

Ward

Urine passed

Temperature

Drawn & Little Gate Pressing Office, Perth 1899

RECORDS OF TEMPERATURE, WATER TAKEN URINE PASSED AND TOTAL URINE EXCRETED

## RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

Australian Mare. Age Aged Sex Mare Colour Bay  
Disease "Surra" Date of Inoculation 21-5-94 Result Death Date of Result 16-7-94 Register No XC VIII Ward

[illegible]

Drawn & Lino. Govt Photodupl. Office, Panna 1894

|              |             |
|--------------|-------------|
| Total U-rea. | Water taken |
| Urine passed | Temperature |





## RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

Australian Mare \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_ Colour \_\_\_\_\_ Bay  
 "Surra" \_\_\_\_\_ Date of Incub. \_\_\_\_\_ Result \_\_\_\_\_ Death \_\_\_\_\_ Register No. \_\_\_\_\_ Ward \_\_\_\_\_  
 Disease \_\_\_\_\_ 21-5-94 \_\_\_\_\_

| Dates of Observation |    | Time    |         | Temperature |      | Urine Passed (litres) |        | Total Urine passed (litres) |        | Days of Disease |      | Organisms in Blood |      |
|----------------------|----|---------|---------|-------------|------|-----------------------|--------|-----------------------------|--------|-----------------|------|--------------------|------|
| May                  | 16 | Time    | Time    | F           | C    | litres                | litres | litres                      | litres | Time            | Time | Time               | Time |
|                      |    | 2.00 PM | 2.00 PM | 100         | 41.4 | 12                    | 8      | 12                          | 8      |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 6      |                             | 6      |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 4      |                             | 4      |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 2      |                             | 2      |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 45     |                             | 45     |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 112    |                             | 112    |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 112    |                             | 112    |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 111    |                             | 111    |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 110    |                             | 110    |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 109    |                             | 109    |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 108    |                             | 108    |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 107    |                             | 107    |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 106    |                             | 106    |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 105    |                             | 105    |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 104    |                             | 104    |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 103    |                             | 103    |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 102    |                             | 102    |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 101    |                             | 101    |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 100    |                             | 100    |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 99     |                             | 99     |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 98     |                             | 98     |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 97     |                             | 97     |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 96     |                             | 96     |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 95     |                             | 95     |                 |      |                    |      |
|                      |    |         |         |             |      |                       | 94     |                             | 94     |                 |      |                    |      |

5pm Inoculated over left Scapular region with 0.7 cc blood taken from a Guinea pig *Haematozoa Swarming*.

*Doronia & Lathraeae Phlegmaria (Dor.) W. 1895*

[illegible]









## RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

Disease \_\_\_\_\_  
 "Surra" (by inoculation) \_\_\_\_\_  
 Australian Mare \_\_\_\_\_  
 Date of Inocn 21-5-94 \_\_\_\_\_  
 Result Death \_\_\_\_\_  
 Register No XCVIII \_\_\_\_\_  
 Sex Mare \_\_\_\_\_  
 Age Aged \_\_\_\_\_  
 Colour Bay \_\_\_\_\_  
 Ward \_\_\_\_\_

[illegible]

Drawn & Litho Govt. Phot. & Int. Proc. 1835

|            |              |
|------------|--------------|
| Total Urea | Urine passed |
| Microtaken | Temperature  |
|            | Haematozoa   |





| Date.  | Quantity. | Colour.       | Reaction.     | Specific Gravity. | Albumen. | Total Hippuric Acid excreted in Urine during 24 hours. Grammes. | Urea. Grammes per 100 c.c. | Total Urea excreted in Urine during twenty-four hours. Grammes. | Water taken during 24 hours. |       | Ratio of Urine passed to water taken daily. | Ratio of Urine passed to Water drunk during Periods of Health and Disease. | Temperature in shade °F. |          | Humidity. | Arsenic administered daily.       | Condition of Blood. |
|--------|-----------|---------------|---------------|-------------------|----------|---|----------------------------|---|------------------------------|-------|---|--|--------------------------|----------|-----------|-----------------------------------|---------------------|
|        |           |               |               |                   |          |   |                            |   | Pts.                         | Lits. |   |  | Maximum.                 | Minimum. |           |                                   |                     |
| 1894.  |           |               |               |                   |          |   |                            |   |                              |       |   |  |                          |          |           |                                   |                     |
| May 17 | 3,630     | Turbid        | Alkaline.     | 1,044             | Nil      | Nil.  | 2.90                       | 105.27  | 15 =                         | 8.55  | 1 : 2.35                                    |  | 95.5                     | 70.9     | 59        | Grains iv                         | ...                 |
| " 18   | 4,250     | "             | "             | 1,043             | "        | "   | 2.50                       | 106.25  | 10 =                         | 5.70  | 1 : 1.34                                    |  | 97.5                     | 72.4     | 65        | " 4.8                             | ...                 |
| " 19   | 2,320     | "             | "             | 1,040             | "        | "   | 3.20                       | 74.24   | 10 =                         | 5.70  | 1 : 2.45                                    | 1 : 2.54   | 99.0                     | 70.4     | 63        | " 6.0                             | ...                 |
| " 20   | 2,560     | "             | "             | 1,041             | "        | "   | 3.30                       | 84.48   | 19 =                         | 10.83 | 1 : 4.23                                    |  | 97.0                     | 72.4     | 58        | " 7.2                             | ...                 |
| " 21*  | 2,490     | "             | "             | 1,046             | "        | "   | 3.20                       | 79.68   | 14 =                         | 7.98  | 1 : 3.21                                    |  | 97.0                     | 69.9     | 56        | " 2.4                             | Inoculated Absent   |
| " 22   | 1,300     | "             | "             | 1,043             | "        | "   | 3.20                       | 41.60   | 16 =                         | 9.12  | 1 : 7.01                                    |  | 98.5                     | 72.4     | 57        | ...                               | "                   |
| " 23   | 2,670     | "             | "             | 1,039             | "        | "   | 2.30                       | 61.41   | 32 =                         | 18.24 | 1 : 6.83                                    | 1 : 5.05   | 101.1                    | 73.8     | 66        | ...                               | "                   |
| " 24   | 2,590     | "             | "             | 1,038             | "        | "   | 2.60                       | 67.34   | 22 =                         | 12.54 | 1 : 5.03                                    |  | 101.0                    | 75.3     | 62        | ...                               | "                   |
| " 25   | 3,200     | "             | "             | 1,039             | "        | "   | 2.60                       | 83.20   | 20 =                         | 11.40 | 1 : 3.66                                    |  | 101.5                    | 72.9     | 60        | ...                               | "                   |
| " 26   | 2,650     | "             | "             | 1,040             | "        | "   | 2.20                       | 58.30   | 20 =                         | 11.40 | 1 : 4.30                                    |  | 99.5                     | 72.4     | 59        | ...                               | "                   |
| " 27   | 2,360     | "             | "             | 1,044             | "        | "   | 2.50                       | 59.00   | 9 =                          | 5.13  | 1 : 2.17                                    |  | 100.5                    | 70.4     | 56        | ...                               | Few.                |
| " 28   | 4,500     | "             | "             | 1,042             | "        | "   | 2.70                       | 121.50  | 6 =                          | 3.42  | 1 : 0.76                                    |  | 100.0                    | 71.9     | 58        | " ii                              | Numerous.           |
| " 29   | 2,220     | "             | "             | 1,055             | "        | "   | 3.90                       | 86.58   | 9 =                          | 5.13  | 1 : 2.31                                    |  | 98.5                     | 70.9     | 57        | " 7.75                            | Numerous.           |
| " 30   | 2,010     | "             | "             | 1,052             | "        | "   | 4.20                       | 84.42   | 8 =                          | 4.56  | 1 : 2.26                                    | 1 : 1.68   | 102.5                    | 71.9     | 60        | " 7.6                             | Very numerous.      |
| " 31   | 2,590     | "             | "             | 1,047             | "        | "   | 4.40                       | 113.96  | 8.5 =                        | 4.84  | 1 : 1.57                                    |  | 100.0                    | 74.3     | 61        | " 1.6 Iodides of As. and Hg. c.c. | Few.                |
| June 1 | 2,140     | "             | "             | 1,045             | "        | "   | 2.80                       | 59.92   | 6 =                          | 3.42  | 1 : 1.59                                    |  | 99.5                     | 75.3     | 61        | ...                               | Absent              |
| " 2    | 1,730     | "             | "             | 1,043             | "        | "   | 2.90                       | 50.17   | 10 =                         | 5.68  | 1 : 3.38                                    |  | 96.2                     | 74.8     | 59        | " xx                              | "                   |
| " 3    | 2,850     | "             | "             | 1,037             | "        | "   | 2.20                       | 62.70   | 16.5 =                       | 9.40  | 1 : 3.30                                    |  | 96.0                     | 74.8     | 61        | " 19.8                            | "                   |
| " 4    | 1,700     | "             | Acid.         | 1,037             | "        | "   | 2.08                       | 35.36   | 20 =                         | 11.36 | 1 : 6.68                                    | 1 : 3.37   | 97.5                     | 73.8     | 60        | " xix                             | "                   |
| " 5    | 2,370     | "             | Faintly Acid. | 1,036             | "        | "   | 2.20                       | 94.80   | 25 =                         | 14.25 | 1 : 6.01                                    |  | 97.0                     | 72.9     | 63        | " xi                              | "                   |
| " 6    | 4,340     | "             | Alkaline.     | 1,036             | "        | "   | 1.56                       | 67.70   | 12 =                         | 6.84  | 1 : 6.57                                    |  | 96.5                     | 73.8     | 69        | " x                               | "                   |
| " 7    | 3,800     | "             | "             | 1,036             | "        | "   | 1.34                       | 50.92   | 8 =                          | 4.56  | 1 : 1.20                                    |  | 96.0                     | 72.4     | 67        | " vii                             | Few.                |
| " 8    | 4,320     | "             | "             | 1,039             | "        | "   | 1.72                       | 74.30   | 12 =                         | 6.84  | 1 : 1.58                                    |  | 90.0                     | 71.4     | 86        | " xv                              | Numerous.           |
| " 9    | 4,750     | "             | "             | 1,035             | "        | "   | 1.50                       | 71.25   | 20 =                         | 11.36 | 1 : 2.39                                    | 1 : 1.31   | 89.5                     | 73.8     | 72        | " x                               | Very numerous.      |
| " 10   | 6,575     | "             | "             | 1,032             | "        | "   | 1.42                       | 93.36   | 6 =                          | 3.42  | 1 : 0.52                                    |  | 90.5                     | 72.9     | 93        | " x                               | Few.                |
| " 11   | 3,840     | "             | "             | 1,032             | "        | "   | 2.08                       | 79.87   | 9 =                          | 5.13  | 1 : 1.33                                    |  | 83.6                     | 68.9     | 74        | " ix                              | Numerous.           |
| " 12   | 6,650     | "             | "             | 1,025             | "        | "   | 1.24                       | 82.46   | 14 =                         | 7.98  | 1 : 1.20                                    |  | 84.5                     | 72.4     | 72        | " xi                              | Very numerous.      |
| " 13   | 6,000     | "             | "             | 1,028             | "        | "   | 2.40                       | 141.00  | 3 =                          | 1.71  | 1 : 0.28                                    |  | 83.6                     | 70.4     | 90        | " xiii                            | Absent              |
| " 14   | 2,440     | "             | "             | 1,039             | "        | "   | 3.20                       | 78.00   | 20 =                         | 11.36 | 1 : 4.65                                    | 1 : 2.04   | 86.0                     | 70.4     | 93        | " x                               | "                   |
| " 15   | 1,480     | "             | "             | 1,043             | "        | "   | 2.50                       | 37.00   | 18 =                         | 10.26 | 1 : 6.93                                    |  | 80.5                     | 72.9     | 84        | ...                               | "                   |
| " 16   | 5,310     | "             | "             | 1,036             | "        | "   | 1.80                       | 95.58   | 9 =                          | 5.13  | 1 : 0.96                                    |  | 86.5                     | 72.4     | 84        | ...                               | "                   |
| " 17   | 1,810     | "             | "             | 1,039             | "        | "   | 1.90                       | 34.39   | 11 =                         | 6.27  | 1 : 3.46                                    |  | 80.1                     | 71.4     | 84        | ...                               | "                   |
| " 18   | 4,140     | "             | "             | 1,041             | "        | "   | 1.85                       | 76.59   | 8 =                          | 4.56  | 1 : 1.10                                    | 1 : 1.52   | 86.0                     | 72.4     | 67        | ...                               | Few.                |
| " 19   | 5,630     | "             | "             | 1,030             | Trace.   | "   | 1.37                       | 77.13   | 18 =                         | 10.26 | 1 : 1.82                                    |  | 90.0                     | 72.9     | 69        | ...                               | Few.                |
| " 20   | 10,000    | "             | "             | 1,028             | "        | "   | 0.85                       | 85.00   | 19 =                         | 18.83 | 1 : 1.08                                    | 1 : 1.77   | 90.0                     | 73.8     | 70        | ...                               | Absent              |
| " 21   | 4,460     | "             | "             | 1,031             | "        | "   | 2.20                       | 98.12   | 26 =                         | 14.82 | 1 : 3.32                                    |  | 87.5                     | 73.4     | 66        | ...                               | "                   |
| " 22   | 5,857     | "             | "             | 1,022             | Nil.     | "   | 1.78                       | 69.11   | 29 =                         | 16.51 | 1 : 2.82                                    |  | 87.5                     | 71.4     | 74        | ...                               | Few.                |
| " 23   | 11,600    | "             | "             | 1,020             | "        | "   | 0.95                       | 116.00  | 20 =                         | 11.36 | 1 : 0.98                                    |  | 82.6                     | 72.4     | 65        | ...                               | Numerous.           |
| " 24   | 10,265    | "             | "             | 1,014             | Trace.   | "   | 1.45                       | 148.84  | 29 =                         | 16.51 | 1 : 1.60                                    | 1 : 1.33   | 89.5                     | 71.9     | 78        | ...                               | Very numerous.      |
| " 25   | 16,500    | "             | "             | 1,012             | "        | "   | 0.90                       | 148.50  | 25 =                         | 14.25 | 1 : 0.86                                    |  | 88.0                     | 70.9     | 79        | ...                               | Numerous.           |
| " 26   | 6,540     | "             | "             | 1,022             | "        | "   | 2.15                       | 139.61  | 31 =                         | 17.67 | 1 : 2.69                                    | 1 : 2.34   | 85.0                     | 71.9     | 65        | ...                               | Absent              |
| " 27   | 2,820     | "             | "             | 1,033             | "        | "   | 2.94                       | 82.90   | 25 =                         | 14.25 | 1 : 5.05                                    |  | 86.5                     | 72.4     | 70        | ...                               | "                   |
| " 28   | 13,550    | "             | "             | 1,015             | "        | "   | 1.16                       | 157.18  | 38 =                         | 21.66 | 1 : 1.59                                    |  | 88.0                     | 70.9     | 88        | ...                               | "                   |
| " 29   | 15,685    | Clear.        | Acid.         | 1,013             | Trace    | "   | 0.80                       | 125.48  | 46 =                         | 26.22 | 1 : 1.67                                    |  | 89.0                     | 70.9     | 70        | ...                               | Few.                |
| " 30   | 16,750    | Turbid Clear. | Neutral.      | 1,012             | "        | "   | 0.80                       | 131.00  | 49 =                         | 27.93 | 1 : 1.66                                    | 1 : 1.39   | 84.5                     | 72.4     | 82        | Grs. viii                         | "                   |
| July 1 | 9,780     | Turbid        | Acid.         | 1,010             | Clear.   | "   | 0.70                       | 68.49   | 13 =                         | 7.47  | 1 : 0.75                                    |  | 88.0                     | 71.9     | 64        | " x                               | "                   |
| " 2    | 4,500     | "             | Alkaline.     | 1,040             | "        | "   | 4.24                       | 190.80  | 6 =                          | 3.43  | 1 : 0.76                                    |  | 86.0                     | 70.9     | 76        | ...                               | "                   |
| " 3    | 3,320     | "             | "             | 1,041             | Grammes. | "   | 4.60                       | 152.72  | 0 =                          | 0.00  | 1 : 0.00                                    |  | 86.5                     | 70.9     | 93        | ...                               | Absent              |
| " 4    | 1,720     | "             | "             | 1,038             | 0.98     | "   | 4.54                       | 78.08   | 2 =                          | 1.14  | 1 : 0.66                                    |  | 84.5                     | 70.9     | 82        | " 1.6                             | "                   |
| " 5    | 2,120     | "             | "             | 1,041             | 2.31     | "   | 3.10                       | 65.72   | 0 =                          | 0.00  | 1 : 0.00                                    |  | 86.0                     | 71.4     | 81        | " 2.0                             | "                   |
| " 6    | 2,200     | "             | "             | 1,040             | 3.03     | "   | 2.60                       | 57.20   | 4 =                          | 2.28  | 1 : 1.04                                    | 1 : 0.47   | 87.5                     | 70.9     | 82        | " 0.8                             | "                   |
| " 7    | 2,860     | "             | "             | 1,039             | 4.29     | "   | 2.56                       | 73.21   | 10 =                         | 5.68  | 1 : 1.98                                    |  | 82.6                     | 70.9     | 80        | ...                               | "                   |
| " 8    | 4,020     | "             | "             | 1,040             | 4.02     | "   | 3.10                       | 124.62  | 3 =                          | 1.71  | 1 : 0.42                                    |  | 87.5                     | 70.4     | 82        | ...                               | "                   |
| " 9    | 4,510     | "             | "             | 1,038             | 4.14     | "   | 2.60                       | 117.00  | 2 =                          | 1.14  | 1 : 0.25                                    |  | 87.0                     | 70.4     | 90        | ...                               | "                   |
| " 10   | 5,140     | "             | "             | 1,032             | 3.59     | "   | 1.85                       | 95.09   | 0 =                          | 0.00  | 1 : 0.00                                    |  | 77.6                     | 69.4     | 97        | ...                               | "                   |
| " 11   | 5,520     | "             | "             | 1,033             | Turbid   | "   | 1.75                       | 96.60   | 0 =                          | 0.00  | 1 : 0.00                                    |  | 72.2                     | 69.9     | 93        | ...                               | Few.                |
| " 12   | 3,650     | "             | "             | 1,026             | 4.02     | "   | 1.50                       | 54.75   | 0 =                          | 0.00  | 1 : 0.00                                    |  | 75.5                     | 68.4     | 93        | ...                               | "                   |
| " 13   | 4,020     | "             | "             | 1,035             | "        | "   | 2.90                       | 116.58  | 0 =                          | 0.00  | 1 : 0.00                                    |  | 78.1                     | 68.9     | 86        | ...                               | "                   |
| " 14   | 3,000     | "             | Acid.         | 1,035             | 3.50     | "   | 2.64                       | 79.20   | 0 =                          | 0.00  | 1 : 0.00                                    | 1 : 0.00   | 82.1                     | 70.9     | 86        | ...                               | "                   |
| " 15   | 1,150     | "             | "             | 1,035             | Turbid   | "   | 3.00                       | 34.50   | 0 =                          | 0.00  | 1 : 0.00                                    |  | 78.5                     | 68.9     | 93        | ...                               | "                   |
| " 16   | 1,380     | "             | "             | 1,030             | Nil.     | "   | 2.00                       | 27.60   | 0 =                          | 0.00  | 1 : 0.00                                    |  | 77.6                     | 69.9     | 93        | ...                               | Numerous.           |

Death at 1-20 P. M.



*Remarks.*—For a period of twenty-one days this animal was kept under observation, and the physiological problems relating to the ingestion and excretion of Nitrogen during health were investigated. Arsenic was then administered to the animal during the next fifty-four days, a total of 320·7 grains being given. On the evening of the day on which the Arsenic was discontinued, the animal was inoculated subcutaneously with 0·7 c.c. of blood containing swarms of hæmatozoa. The period of incubation lasted 5·5 days, and then the animal passed through the ordinary stages of Surra, but in a less virulent form than is usually met with in naturally contracted cases.

It may be here noted that the animal was intolerant of Arsenic, and therefore instead of being able to administer doses up to eight or nine grains twice in the 24 hours, only 5·9 grains daily were actually ingested, a quantity totally insufficient to have any material effect on the hæmatozoon. It appears from our experience, that animals suffering from Surra have a greater tolerance of Arsenic than healthy ones, when the drug is administered for a lengthened period as in the above experiment. The investigations commenced in health were continued throughout the disease, and the following data are now recorded:—

|                               | Average daily<br>Urine<br>cc. | Average Urea,<br>Grammes. | Average Water<br>drunk,<br>Litres. | Ratio of Urea<br>to Urine. |
|-------------------------------|-------------------------------|---------------------------|------------------------------------|----------------------------|
| Health... ..                  | 3,163                         | 31·95                     | 21·050                             | 1 : 98·9                   |
| Preliminary Treatment Arsenic | 2,851                         | 73·09                     | 10·340                             | 1 : 39·0                   |
| Latent Period                 | 2,482                         | 62·37                     | 12·540                             | 1 : 39·8                   |
| Paroxysms                     | 6,039                         | 91·92                     | 7·440                              | 1 : 65·6                   |
| Intermissions                 | 3,976                         | 87·33                     | 7·370                              | 1 : 45·5                   |
| Whole Period                  | 3,750                         | 72·63                     | 11·000                             | 1 : 51·6                   |

#### HORSE No. XCIX.

Bay Australian Gelding, cast for age.

*State on admission.*—The animal is in good condition. The visible mucous membranes are clear, the skin is cool. Temp. 37·4°C., P. 36, R. 12. The extremities are fine. The appetite is good and the excreta healthy in appearance.

This animal was also subjected to an experiment for the purpose of determining the efficacy of a drug, sufficient to cause the full physiological effects, previous to submitting it to experimental inoculation with Surra. Further it was intended to prosecute several interesting problems with regard to the ingestion and excretion of Nitrogen, urine and water during health and the course of the disease (Surra) under treatment.

| Date.       | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of<br>Disease. | Hæmatozoa<br>in the Blood. | REMARKS.  |
|-------------|-----------------|--------|--------|--------|------|--------------|------|--------------------|----------------------------|---|
|             | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                    |                            |   |
| 1894.       |                 |        |        |        |      |              |      |                    |                            |   |
| March 29... | ...             | ...    | ...    | 28     | 29   | 25           | 16   | ...                | .....                      | Conjunctival membranes congested, no petechiæ               |
| „ 30...     | ...             | ...    | ...    | 28     | 28   | 24           | 21   | ...                | .....                      | Do. do.   |
| „ 31...     | ...             | ...    | ...    | 28     | 29   | 12           | 23   | ...                | .....                      | Conjunctival membranes clear; but two petechiæ in the left. |
| April 1...  | ...             | ...    | ...    | 28     | 32   | 16           | 20   | ...                | .....                      | Conjunctival membranes clear. Petechiæ fading.              |
| „ 2...      | ...             | ...    | ...    | 30     | 30   | 19           | 23   | ...                | .....                      | Conjunctival membranes clear.                               |
| „ 3...      | ...             | ...    | 37·6   | 31     | 31   | 15           | 25   | ...                | .....                      | Do. do. no petechiæ.  |
| „ 4...      | 37·4            | ...    | 37·4   | 31     | 31   | 26           | 23   | ...                | .....                      | Do. do.   |
| „ 5...      | 37·3            | ...    | 37·7   | 34     | 30   | 23           | 25   | ...                | .....                      | Right conjunctiva slightly congested; left, clear.          |
| „ 6...      | 37·3            | ...    | 37·7   | 30     | 32   | 24           | 21   | ...                | .....                      | Both conjunctivæ clear.                                     |
| „ 7...      | 37·4            | ...    | 37·5   | 31     | 32   | 14           | 22   | ...                | .....                      | Do. do.   |
| „ 8...      | 37·5            | ...    | 37·5   | 30     | 31   | 19           | 21   | ...                | .....                      | Do. do.   |
| „ 9...      | 37·3            | ...    | 37·8   | 32     | 31   | 16           | 22   | ...                | .....                      | Do. do.   |
| „ 10...     | 37·0            | ...    | 37·5   | 31     | 32   | 20           | 26   | ...                | .....                      | Do. do.   |
| „ 11...     | 37·5            | ...    | 37·6   | 32     | 31   | 25           | 29   | ...                | .....                      | Right conjunctiva clear; left, one spot.                    |
| „ 12...     | 37·3            | ...    | 37·6   | 31     | 34   | 23           | 26   | ...                | .....                      | Both conjunctivæ clear.                                     |
| „ 13...     | 37·6            | ...    | 37·8   | 32     | 33   | 16           | 26   | ...                | .....                      | Left conjunctiva, one spot.                                 |
| „ 14...     | 37·7            | ...    | 37·7   | 35     | 35   | 23           | 26   | ...                | .....                      | Do. do.   |
| „ 15...     | 37·6            | ...    | 37·7   | 37     | 35   | 27           | 22   | ...                | .....                      | Left conjunctiva traces of petechiæ; right, clear.          |
| „ 16...     | 37·6            | ...    | 37·6   | 36     | 36   | 31           | 26   | ...                | .....                      | Right conjunctiva one spot; left, clear.                    |
| „ 17...     | 37·5            | ...    | 37·6   | 30     | 36   | 32           | 31   | ...                | .....                      | Do. do.   |
| „ 18...     | 37·8            | ...    | 37·7   | 38     | 34   | 34           | 25   | ...                | .....                      | Both conjunctivæ clear.                                     |
| „ 19...     | 37·6            | ...    | 37·5   | 36     | 37   | 24           | 26   | ...                | .....                      | Do.   |
| „ 20...     | 37·5            | ...    | 37·6   | 37     | 35   | 38           | 26   | ...                | .....                      | Do.   |
| „ 21...     | 37·3            | ...    | 37·5   | 38     | 35   | 27           | 26   | ...                | .....                      | Do.   |
| „ 22...     | 38·0            | ...    | 37·6   | 41     | 35   | 26           | 23   | ...                | .....                      | Do.   |
| „ 23...     | 37·5            | ...    | 37·6   | 35     | 34   | 35           | 25   | ...                | .....                      | Do.   |



| Date.       | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in the Blood. | REMARKS.  |
|-------------|-----------------|--------|--------|--------|------|--------------|------|-----------------|-------------------------|---|
|             | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                         |   |
| 1894.       |                 |        |        |        |      |              |      |                 |                         |   |
| April 24... | 37.7            | ...    | 37.6   | 35     | 33   | 25           | 31   | ...             | .....                   | Both conjunctivæ clear.   |
| " 25...     | 37.6            | ...    | 37.8   | 35     | 34   | 25           | 24   | ...             | .....                   | Do.   |
| " 26...     | 37.5            | ...    | 37.7   | 36     | 37   | 27           | 24   | ...             | .....                   | Do.   |
| " 27...     | 37.7            | ...    | 37.7   | 37     | 36   | 24           | 31   | ...             | .....                   | Slight trace of petechiæ in the right conjunctiva; left, clear.   |
| " 28...     | 37.3            | ...    | 37.7   | 37     | 38   | 28           | 31   | ...             | .....                   | Both conjunctivæ clear.   |
| " 29...     | 37.2            | ...    | 37.6   | 35     | 36   | 18           | 24   | ...             | .....                   | Do. do. Slight swellings on both shoulders.   |
| " 30...     | 37.5            | ...    | 37.7   | 36     | 35   | 11           | 23   | ...             | .....                   | Do. do.   |
| May 1...    | 37.6            | ...    | 37.8   | 36     | 38   | 12           | 24   | ...             | .....                   | Right conjunctiva one spot; left, clear; slight swellings on shoulder.  |
| " 2...      | 37.4            | ...    | 37.6   | 39     | 35   | 22           | 19   | ...             | .....                   | Right conjunctiva one large spot; left, clear. Slight swellings on shoulder.  |
| " 3...      | 37.6            | ...    | 37.8   | 37     | 36   | 20           | 32   | ...             | .....                   | Right conjunctiva trace of petechiæ. Left conjunctiva yellowish, but free from petechiæ. Slight swellings on shoulder.  |
| " 4...      | 37.7            | ...    | 37.8   | 36     | 38   | 28           | 22   | ...             | .....                   | Both conjunctivæ clear. Swellings continue.   |
| " 5...      | 37.4            | ...    | 37.7   | 36     | 39   | 25           | 28   | ...             | .....                   | Do. do.   |
| " 6...      | 37.8            | ...    | 37.6   | 35     | 40   | 26           | 28   | ...             | .....                   | Do. do.   |
| " 7...      | 37.6            | ...    | 37.7   | 35     | 32   | 21           | 22   | ...             | .....                   | Do. do.   |
| " 8...      | 37.6            | ...    | 37.8   | 35     | 37   | 14           | 28   | ...             | .....                   | Do. do.   |
| " 9...      | 37.8            | ...    | 37.8   | 36     | 41   | 13           | 27   | ...             | .....                   | Do. do.   |
| " 10...     | 37.7            | ...    | 38.2   | 36     | 40   | 15           | 29   | ...             | .....                   | Right conjunctiva slightly congested; left, clear.  |
| " 11...     | 38.1            | ...    | 39.0   | 36     | 37   | 13           | 42   | ...             | .....                   | Both conjunctivæ clear.   |
| " 12...     | 38.6            | ...    | 39.2   | 49     | 44   | 22           | 36   | ...             | .....                   | Right conjunctiva slightly congested; left, clear. Small raised swellings on both shoulders and flanks.   |
| " 13...     | 38.3            | ...    | 39.0   | 54     | 60   | 30           | 28   | ...             | .....                   |   |
| " 14...     | 38.0            | ...    | 38.4   | 43     | 42   | 19           | 28   | ...             | .....                   |   |
| " 15...     | 38.1            | ...    | 38.2   | 45     | 40   | 13           | 26   | ...             | .....                   |   |
| " 16...     | 37.4            | ...    | 38.0   | 38     | 36   | 22           | 24   | ...             | .....                   |   |
| " 17...     | 37.5            | ...    | 37.8   | 37     | 35   | 35           | 24   | ...             | .....                   |   |
| " 18...     | 37.7            | ...    | 38.0   | 35     | 33   | 12           | 30   | ...             | .....                   |   |
| " 19...     | 37.6            | ...    | 37.7   | 34     | 34   | 21           | 35   | ...             | .....                   |   |
| " 20...     | 37.5            | ...    | 37.6   | 34     | 28   | 17           | 24   | ...             | .....                   |   |
| " 21...     | 37.6            | ...    | 37.8   | 35     | 37   | 12           | 28   | ...             | Inoculated              |   |
| " 22...     | 37.7            | ...    | 38.1   | 35     | 44   | 26           | 44   | ...             | Absent                  |   |
| " 23...     | 37.7            | 38.0   | 37.7   | 35     | 34   | 22           | 16   | ...             | "                       |   |
| " 24...     | 38.2            | 38.3   | 38.2   | 38     | 37   | 40           | 26   | ...             | "                       |   |
| " 25...     | 38.1            | 38.3   | 38.4   | 36     | 39   | 28           | 40   | ...             | "                       |   |
| " 26...     | 39.5            | 40.7   | 41.0   | 42     | 61   | 11           | 45   | 1               | Few                     | Right conjunctiva extravasated; left, one spot, injected. Swelling at seat of inoculation $2\frac{1}{4}'' \times 2'' \times \frac{3}{8}''$ . Tenderness disappeared |
| " 27...     | 41.0            | 41.4   | 41.2   | 55     | 56   | 12           | 32   | 2               | "                       |   |
| " 28...     | 37.4            | 37.7   | 37.6   | 37     | 41   | 22           | 26   | 3               | "                       |   |
| " 29...     | 37.6            | 37.8   | 38.0   | 36     | 38   | 21           | 25   | 4               | Absent                  | Right conjunctiva one extravasation; left, yellow and petechiated. Swelling hard and flat.  |
| " 30...     | 39.3            | 41.7   | 41.1   | 44     | 63   | 8            | 41   | 5               | Few                     | Conjunctivæ yellow. General urticarial eruption; near hind leg much swollen. Corn refused.  |
| " 31...     | 37.8            | 37.5   | 37.4   | 48     | 44   | 21           | 21   | 6               | "                       | Right conjunctiva yellow and injected; left, yellow and petechiated; eruption on both shoulders; near hind leg much swollen. Corn refused.                          |
| June 1...   | 37.4            | 37.8   | 38.0   | 40     | 41   | 23           | 34   | 7               | "                       | Conjunctivæ petechiated, eruption disappearing.   |
| " 2...      | 37.8            | 38.1   | 37.8   | 48     | 41   | 16           | 38   | 8               | Absent                  | Conjunctivæ less petechiated eruption re-appearing.   |
| " 3...      | 37.5            | 37.6   | 38.2   | 38     | 35   | 12           | 42   | 9               | "                       | Right conjunctiva clear; left, one extravasation.   |

| Date.     | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in the Blood. | REMARKS.   |
|-----------|-----------------|--------|--------|--------|------|--------------|------|-----------------|-------------------------|--|
|           | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                         |  |
| 1894.     |                 |        |        |        |      |              |      |                 |                         |  |
| June 4... | 37.5            | 37.7   | 37.8   | 38     | 36   | 16           | 39   | 10              | Absent.                 | Conjunctivæ normal.  |
| " 5...    | 38.2            | 38.2   | 38.8   | 43     | 37   | 24           | 35   | 11              | "                       | Right conjunctiva one large extravasation with yellow spot in centre.  |
| " 6...    | 41.0            | 41.4   | 40.8   | 67     | 65   | 16           | 13   | 12              | Few                     | Conjunctivæ yellow and injected, with small petechiæ.  |
| " 7...    | 37.5            | 37.1   | 37.2   | 39     | 39   | 24           | 21   | 13              | Absent                  | Conjunctivæ unchanged.   |
| " 8...    | 37.7            | 37.6   | 37.8   | 35     | 33   | 20           | 19   | 14              | "                       | Do.  |
| " 9...    | 37.8            | 38.0   | 38.5   | 37     | 35   | 14           | 15   | 15              | Few                     | Conjunctivæ petechiated.   |
| " 10...   | 41.5            | 41.7   | 40.5   | 62     | 58   | 30           | 18   | 16              | "                       | Conjunctivæ orange and petechiated, urticarial eruption over ribs on both sides.                                       |
| " 11...   | 36.8            | 37.1   | 37.4   | 41     | 36   | 15           | 12   | 17              | Absent                  | Conjunctivæ yellow.  |
| " 12...   | 38.0            | 37.7   | 38.0   | 41     | 36   | 10           | 12   | 18              | "                       | Right conjunctiva one spot; left, several.   |
| " 13...   | 37.5            | 37.7   | 37.6   | 36     | 36   | 7            | 10   | 19              | "                       | Right conjunctiva one spot; left, one spot, yellow. Slight thickening and hardness of skin at seat of inoculation.     |
| " 14...   | 37.7            | 37.7   | 38.0   | 37     | 40   | 7            | 8    | 20              | "                       | Conjunctivæ yellow and petechiated; flatulent.   |
| " 15...   | 38.5            | 39.4   | 40.2   | 39     | 52   | 7            | 15   | 21              | Few                     | Conjunctivæ yellow and petechiated, eruption on left rump and between the thighs.                                      |
| " 16...   | 40.4            | 40.4   | 38.8   | 51     | 44   | 16           | 15   | 22              | "                       | Conjunctivæ yellow and petechiated; eruption disappeared.  |
| " 17...   | 37.5            | 37.6   | 38.0   | 36     | 36   | 11           | 8    | 23              | Numerous                | Conjunctivæ yellow and petechiated.  |
| " 18...   | 41.0            | 41.3   | 41.4   | 74     | 69   | 10           | 11   | 24              | "                       | Conjunctivæ yellow and petechiated; general eruption re-appeared.  |
| " 19...   | 38.0            | 37.8   | 37.3   | 50     | 42   | 15           | 21   | 25              | Absent                  | Conjunctivæ yellow and petechiated; eruption on fore and hind limbs.   |
| " 20...   | 37.3            | 37.7   | 37.5   | 37     | 38   | 11           | 17   | 26              | "                       | Conjunctivæ yellow and petechiated; eruption fading on thighs, appearing on ribs.                                      |
| " 21...   | 37.7            | 38.0   | 37.5   | 36     | 40   | 11           | 14   | 27              | "                       | Conjunctivæ yellow and petechiated; eruption in large patches on shoulders; swelling at seat of inoculation increased. |
| " 22...   | 37.8            | 39.0   | 38.4   | 41     | 55   | 8            | 15   | 28              | "                       | Conjunctivæ yellow and petechiated, eruption still present.  |
| " 23...   | 38.6            | 38.4   | 38.4   | 47     | 42   | 16           | 12   | 29              | Few                     | Condition unchanged.   |
| " 24...   | 39.2            | 40.0   | 40.1   | 48     | 52   | 9            | 28   | 30              | "                       | Conjunctivæ unchanged, swelling beneath chest.   |
| " 25...   | 39.3            | 39.6   | 39.7   | 51     | 51   | 10           | 14   | 31              | "                       | Conjunctivæ unchanged, swelling increased, eruption general, patches 1" long on left shoulder.                         |
| " 26 ..   | 40.5            | 40.5   | 41.0   | 63     | 65   | 13           | 18   | 32              | "                       | Conjunctivæ unchanged, eruption well marked. Penis and sheath swollen.   |
| " 27...   | 39.4            | 38.5   | 39.1   | 59     | 60   | 15           | 18   | 33              | "                       | Conjunctivæ unchanged, eruption disappearing, near hind leg and chest swollen. Scabs on seat of inoculation.           |
| " 28...   | 39.8            | 40.1   | 40.5   | 56     | 55   | 24           | 16   | 34              | "                       | Conjunctivæ unchanged. Swellings increased.  |
| " 29...   | 40.3            | 40.1   | 38.8   | 70     | 60   | 16           | 22   | 35              | Absent                  | Do. do.  |
| " 30...   | 37.8            | 38.8   | 38.6   | 54     | 46   | 9            | 13   | 36              | "                       | Do. Swellings unchanged.   |
| July 1... | 38.4            | 38.0   | 38.2   | 52     | 64   | 12           | 23   | 37              | "                       | Condition unchanged.   |
| " 2...    | 40.2            | 39.6   | 39.2   | 75     | 55   | 16           | 14   | 38              | "                       | Conjunctivæ unchanged. Swellings reduced.  |
| " 3...    | 39.4            | 39.2   | 38.7   | 67     | 55   | 12           | 12   | 39              | "                       | Conjunctivæ unchanged. General urticarial eruption.  |
| " 4...    | 39.3            | 39.4   | 38.6   | 58     | 56   | 13           | 14   | 40              | "                       | Condition unchanged.   |
| " 5...    | 39.4            | 39.0   | 38.2   | 63     | 56   | 16           | 12   | 41              | "                       | Conjunctivæ yellow and petechiated; general urticarial eruption.   |
| " 6...    | 39.3            | 39.2   | 38.6   | 61     | 56   | 16           | 20   | 42              | "                       | Swellings reduced. Condition unchanged.  |



## RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED

Australian. 341 grains each of As<sub>2</sub> and Hg<sub>2</sub> and 107.5 grains Arsenic administered Age Aged Sex Gelding Colours Bay.  
Disease "Surra" (by subcutaneous inoculation) Date of inoculation 21-5-94 Result Death Date of Result 24-7-94 Registrar No. XCIX Ward.

| Dates of Observation |          | Temperature |     | Urine passed daily (grains) (litres) |       | Organisms in Blood |       | Days of Disease |       | Health period, March 29 <sup>th</sup> to April 5 <sup>th</sup> |       | Preliminary treatment, April 5 <sup>th</sup> to May 21 <sup>st</sup> |       | Record of Organisms in Blood. |       | Swarming |       |
|----------------------|----------|-------------|-----|--------------------------------------|-------|--------------------|-------|-----------------|-------|--|-------|--|-------|-------------------------------|-------|----------|-------|
| 1894                 | March 29 | Time        | F   | C                                    | Time  | Time               | Time  | Time            | Time  | Time   | Time  | Time   | Time  | Time                          | Time  | Time     | Time  |
|                      |          | AM PM       |     |                                      | AM PM | AM PM              | AM PM | AM PM           | AM PM | AM PM  | AM PM | AM PM  | AM PM | AM PM                         | AM PM | AM PM    | AM PM |
|                      |          | 180         | 104 | 40                                   | 8     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 103 | 39                                   | 6     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 102 | 38                                   | 4     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 101 | 37                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 100 | 36                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 99  | 35                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 98  | 34                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 97  | 33                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 96  | 32                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 95  | 31                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 94  | 30                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 93  | 29                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 92  | 28                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 91  | 27                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 90  | 26                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 89  | 25                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 88  | 24                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 87  | 23                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 86  | 22                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 85  | 21                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 84  | 20                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 83  | 19                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 82  | 18                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 81  | 17                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 80  | 16                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 79  | 15                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 78  | 14                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 77  | 13                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 76  | 12                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 75  | 11                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 74  | 10                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 73  | 9                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 72  | 8                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 71  | 7                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 70  | 6                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 69  | 5                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 68  | 4                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 67  | 3                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 66  | 2                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 65  | 1                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 64  | 0                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 63  | 31                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 62  | 30                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 61  | 29                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 60  | 28                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 59  | 27                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 58  | 26                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 57  | 25                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 56  | 24                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 55  | 23                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 54  | 22                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 53  | 21                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 52  | 20                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 51  | 19                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 50  | 18                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 49  | 17                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 48  | 16                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 47  | 15                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 46  | 14                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 45  | 13                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 44  | 12                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 43  | 11                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 42  | 10                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 41  | 9                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 40  | 8                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 39  | 7                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 38  | 6                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 37  | 5                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 36  | 4                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 35  | 3                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 34  | 2                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 33  | 1                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 32  | 0                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 31  | 31                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 30  | 30                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 29  | 29                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 28  | 28                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 27  | 27                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 26  | 26                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 25  | 25                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 24  | 24                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 23  | 23                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 22  | 22                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 21  | 21                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 20  | 20                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 19  | 19                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 18  | 18                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 17  | 17                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 16  | 16                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 15  | 15                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 14  | 14                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 13  | 13                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 12  | 12                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 11  | 11                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 10  | 10                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 9   | 9                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 8   | 8                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 7   | 7                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 6   | 6                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 5   | 5                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 4   | 4                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 3   | 3                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 2   | 2                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 1   | 1                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 0   | 0                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 31  | 31                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 30  | 30                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 29  | 29                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 28  | 28                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 27  | 27                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 26  | 26                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 25  | 25                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 24  | 24                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 23  | 23                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 22  | 22                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 21  | 21                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 20  | 20                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 19  | 19                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 18  | 18                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 17  | 17                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 16  | 16                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 15  | 15                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 14  | 14                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 13  | 13                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 12  | 12                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 11  | 11                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 10  | 10                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 9   | 9                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 8   | 8                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 7   | 7                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 6   | 6                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 5   | 5                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 4   | 4                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 3   | 3                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 2   | 2                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 1   | 1                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 0   | 0                                    | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 31  | 31                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 30  | 30                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 29  | 29                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 28  | 28                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 27  | 27                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 26  | 26                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |
|                      |          |             | 25  | 25                                   | 2     |                    |       |                 |       |  |       |  |       |                               |       |          |       |

Drawn: Litho Graphico Office, Poona 1894

| Total Urea  | Urine passed | Temperature |
|-------------|--------------|-------------|
| Water taken |              |             |













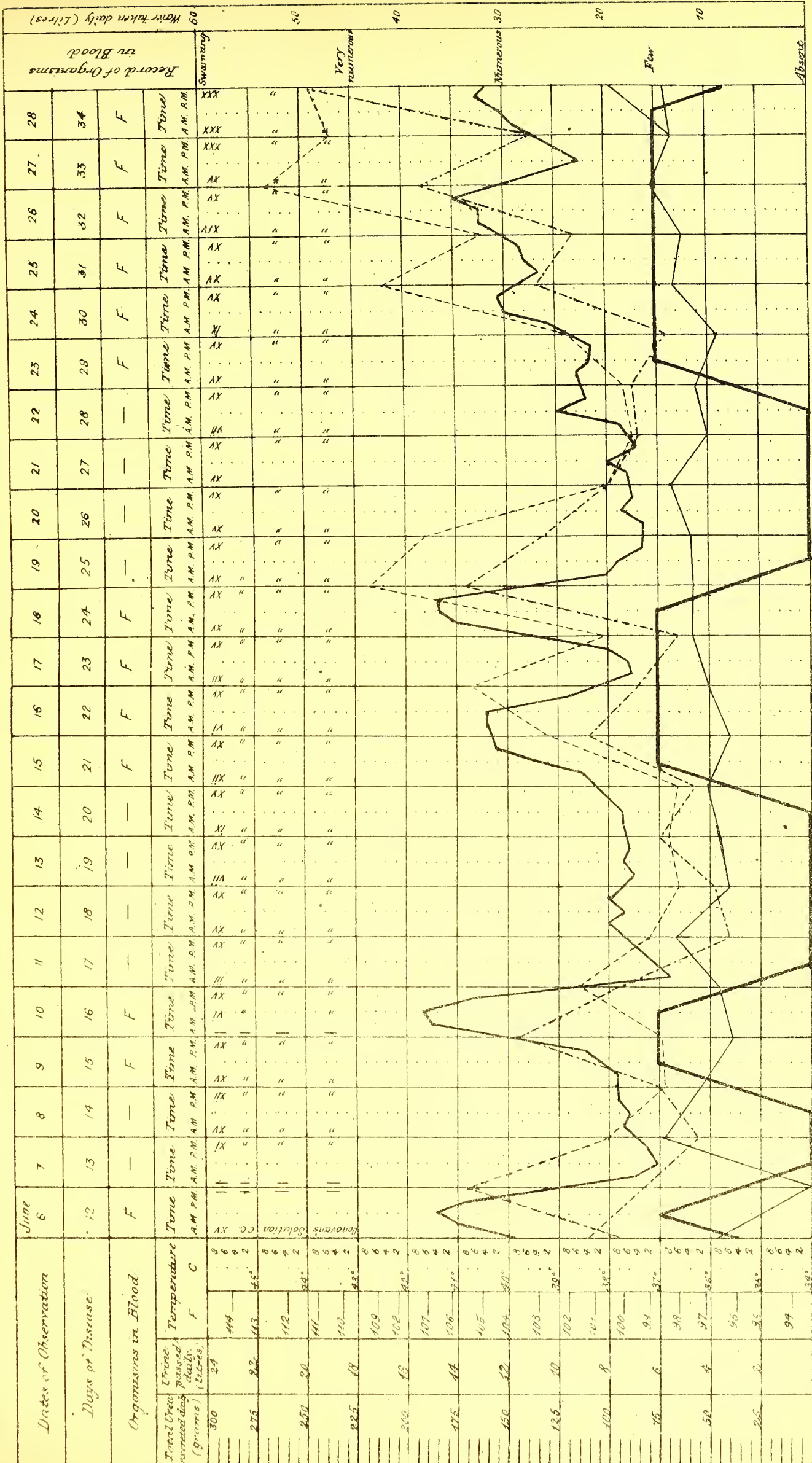
RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

Age 42

Star including

RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

*A. strabularis* Gelding      Age Aged      Sex Gelding      Colour Bay      Disease Surra (subcutaneous necrosis)      Date of Inoculation 21-5-94      Result Death      Date of Results 24-7-94      Register No XCIX      Ward



Drawn & Lined, Goff Pharmacopoeia (1894), Page 1894

Urine passed

Temperature

Hematozoa

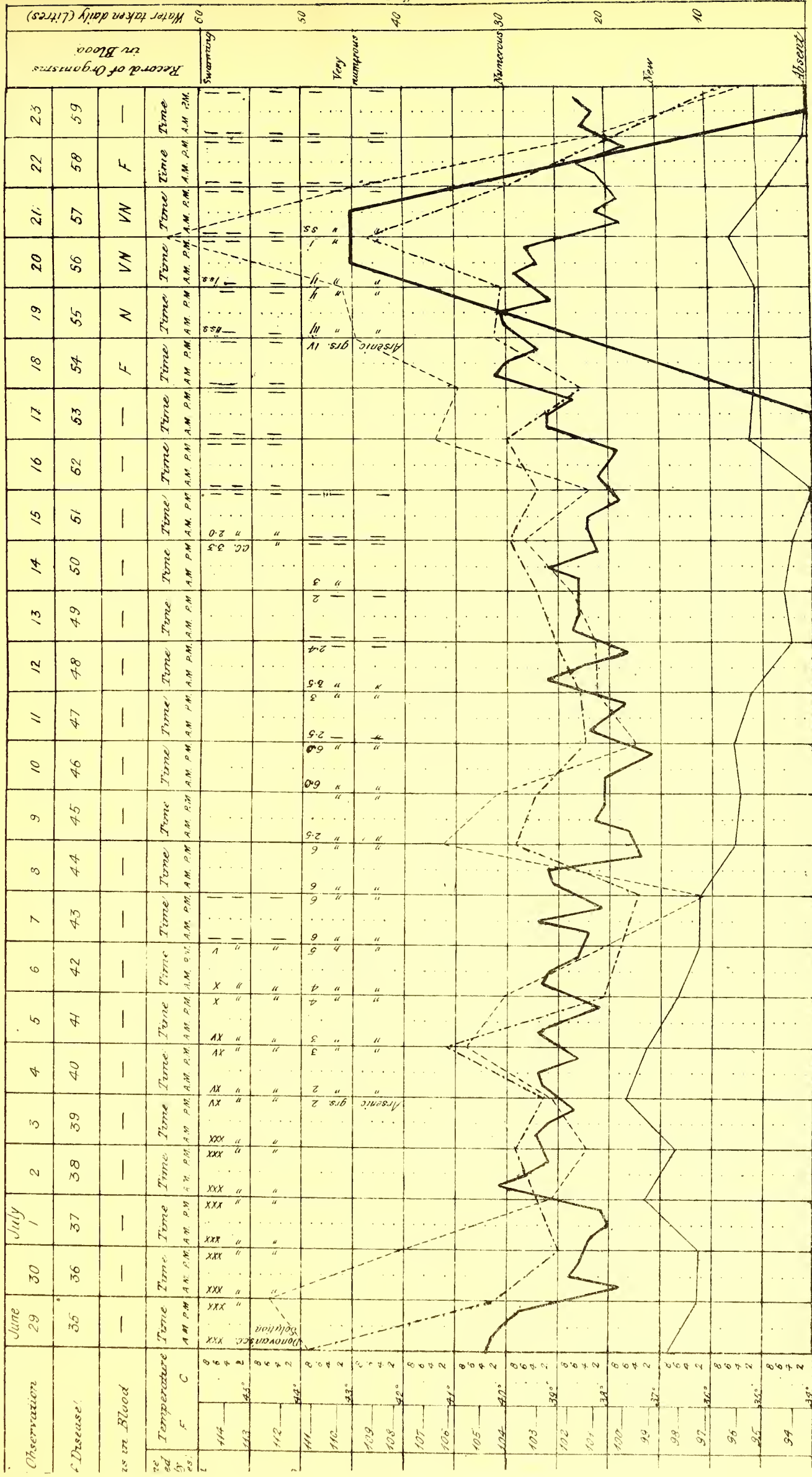
\* Urine and Urea figures doubled, owing to increased excretion





RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

Australian Gelding      Age Aged      Sex Gelding      Colour Bay      Date of Result 24-7-94      Register No. XCIX      Ward



Disease St.

| Dates of                             |                 |
|--------------------------------------|-----------------|
| Days of                              |                 |
| Organism                             |                 |
| Total Urea<br>excreted daily (grams) | Urea<br>(grams) |
| 300                                  | 24              |
| 275                                  | 22              |
| 250                                  | 20              |
| 225                                  | 18              |
| 200                                  | 16              |
| 175                                  | 14              |
| 150                                  | 12              |
| 125                                  | 10              |
| 100                                  | 8               |
| 75                                   | 6               |
| 50                                   | 4               |
| 25                                   | 2               |
| S. 416                               |                 |



| Date.     | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in the Blood. | REMARKS.  |
|-----------|-----------------|--------|--------|--------|------|--------------|------|-----------------|-------------------------|---|
|           | A.M.            | 1 P.M. | 3 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                         |   |
| 1894.     |                 |        |        |        |      |              |      |                 |                         |   |
| July 7... | 38.4            | 39.3   | 38.1   | 62     | 56   | 13           | 11   | 43              | Absent.                 | General condition unchanged. Sphincter ani relaxed and orifice patent.                          |
| " 8...    | 39.1            | 39.2   | 37.4   | 64     | 60   | 10           | 12   | 44              | "                       | General condition unchanged.  |
| " 9...    | 37.6            | 38.3   | 38.1   | 57     | 51   | 9            | 13   | 45              | "                       | Do. do.   |
| " 10...   | 38.1            | 37.8   | 37.2   | 50     | 50   | 11           | 11   | 46              | "                       | Do. do. Swellings reduced.  |
| " 11...   | 38.4            | 38.1   | 37.7   | 49     | 49   | 10           | 7    | 47              | "                       | Do. do.   |
| " 12...   | 39.2            | 38.6   | 37.7   | 55     | 52   | 11           | 9    | 48              | "                       | Right conjunctivæ clear; left, unchanged. Swellings disappeared. Slight eruption still present. |
| " 13...   | 38.7            | 38.6   | 38.6   | 54     | 51   | 10           | 9    | 49              | "                       | Conjunctivæ clearer. Animal brighter.   |
| " 14...   | 38.6            | 39.2   | 38.2   | 57     | 50   | 12           | 8    | 50              | "                       | Conjunctivæ yellow and petechiated.   |
| " 15...   | 38.4            | 38.4   | 37.8   | 54     | 42   | 12           | 8    | 51              | "                       | Conjunctivæ less yellow and petechiated.  |
| " 16...   | 38.2            | 38.0   | 37.8   | 52     | 44   | 8            | 10   | 52              | "                       | Right conjunctivæ clear; left, three faint spots.   |
| " 17...   | 39.2            | 39.2   | 38.7   | 51     | 45   | 8            | 7    | 53              | "                       | Both conjunctivæ yellow and petechiated. Eruption increasing.                                   |
| " 18...   | 40.2            | 40.0   | 39.4   | 57     | 57   | 16           | 8    | 54              | Few.                    | Both conjunctivæ yellow and petechiated; eruption disappeared.                                  |
| " 19...   | 40.0            | 40.1   | 39.1   | 60     | 55   | 10           | 11   | 55              | Numerous.               | Both conjunctivæ yellow and petechiated; general eruption reappeared.                           |
| " 20...   | 39.8            | 39.4   | 39.6   | 74     | 87   | 12           | 12   | 56              | Very numerous.          | Both conjunctivæ yellow and petechiated.  |
| " 21...   | 37.7            | 38.2   | 37.4   | 79     | 86   | 13           | 12   | 57              | "                       | Do. do.   |
| " 22...   | 38.3            | 38.5   | 37.6   | 86     | 94   | 13           | 18   | 58              | Few.                    | Do. do.   |
|           |                 |        |        |        |      |              |      |                 |                         | Do. do. Passing glairy mucus from rectum. Anus patent.  |
| " 23...   | 38.7            | 38.5   | 38.8   | 92     | 112  | 19           | 20   | 59              | Absent.                 | Conjunctivæ unchanged, discharge from left eye. Passing glairy mucus from rectum. Anus patent.  |
| " 24...   | ...             | Death  | at     | 7-15   | A.M. |              |      | 60              | .....                   |   |

July 24th 1894. — Autopsy seven hours post mortem.

The body is well nourished and there are no signs of œdema on the lower extremities, abdomen, or chest.

*Thorax.*—Is free from fluid and there are no pleuritic adhesions.

*Lungs.*—Are pink in colour, are not petechiated, appear to be well distended with air, and on section the tissues present a healthy appearance.

The *pericardial sac* contains about one drachm of a clear fluid.

*Heart.*—Weighs 6 lbs. 12½ ozs. Externally the organ is free from ecchymoses. On section the right auricle and ventricle are found to contain a mass of dark blood clots, and there are two small subendocardial extravasations. The left auricle contains a few clots. The left ventricle is contracted, and contains a small amount of clot. There are several subendocardial extravasations the size of a two-anna piece, situated for the most part round the base of the musculi-papillares. Valves healthy.

The abdominal cavity is free from fluid.

*Liver.*—Weighs 17 lbs. 1 oz., is considerably enlarged. The capsule presents signs of old inflammation. On section the tissues are dark in colour and some blood escapes from the cut ends of the vessels.

*Spleen.*—Weighs 5 lbs. 12¼ ozs., is nearly three times the normal size. There are numerous sub-capsular petechiæ. On section the tissues are soft and dark in colour.

*Kidneys.*—The right weighs 1 lb. 13½ ozs., the left 2 lbs. 1½ ozs. The capsules strip easily. The surfaces of both organs are petechiated. On section the tissues appear dark, but are firm.

*Stomach.*—Contains semi-digested food. On section the cuticular portion is pale and free from pathological change. The mucous membrane of the villous portion presents a certain amount of congestion, and there is a *spiroptera* tumour situated near the divisional line between the two parts of the organs.

*Small Intestines.*—The mucous membrane is somewhat congested in patches throughout its whole length.

*Large Intestine.*—Presents a normal appearance.

*Bladder.*—Contains some fifteen ounces of dark sherry-coloured urine. The mucous membrane is petechiated at the fundus, and there are a few small ecchymoses round the neck of the organ.

TABLE OF URINE AND WATER—HORSE XCIX.

| Date.    | Quantity. | Colour. | Reaction. | Specific Gravity. | Albumen.         | Phosphates. | Hippuric Acid. | Urea. Grammes. per 100 c. c. | Total Urea excreted in Urine during twenty-four hours. Grammes. | Water taken during 24 hours. Pints. Lit. | Ratio of Urine passed to Water taken daily. | Ratio of Urine passed to Water drunk during period of health and Disease. | Temperature in shade ° F. |          | Humidity. | Donovan's Solution administered daily. c. c. | Condition of Blood. |
|----------|-----------|---------|-----------|-------------------|------------------|-------------|----------------|------------------------------|---|--|---|---|---------------------------|----------|-----------|--|---------------------|
|          |           |         |           |                   |                  |             |                |                              |   |  |   |   | Maximum.                  | Minimum. |           |  |                     |
| 1894.    |           |         |           |                   | Grammes.         |             | Grammes.       |                              | Grammes.  |  |   |   |                           |          |           |  |                     |
| March 29 | 3,055     | Turbid  | Alkaline. | 1,042             | Nil.             | Nil.        | 3.05           | 1.40                         | 42.77   | ...                                      | ...   | .....   | 97.5                      | 68.4     | 57        | ...  | Healthy.            |
| " 30     | 2,670     | "       | "         | 1,050             | "                | "           | 2.36           | 1.65                         | 44.05   | 55=31.35                                 | 1: 11.74                                    |   | 94.0                      | 68.4     | 54        | ...  | "                   |
| " 31     | 1,630     | "       | "         | 1,055             | "                | "           | 17.93          | 1.84                         | 40.00   | 57=29.07                                 | 1: 17.83                                    |   | 96.0                      | 64.9     | 51        | ...  | "                   |
| April 1  | 3,850     | "       | "         | 1,040             | "                | "           | 3.85           | 1.15                         | 44.27   | 61=34.77                                 | 1: 9.03                                     |   | 100.0                     | 65.4     | 40        | ...  | "                   |
| " 2      | 2,040     | "       | "         | 1,053             | "                | "           | 18.36          | 1.30                         | 26.52   | 67=38.19                                 | 1: 18.72                                    | 1: 11.52  | 100.5                     | 62.4     | 32        | ...  | "                   |
| " 3      | 2,730     | "       | "         | 1,045             | "                | "           | 21.84          | 1.22                         | 34.12   | 35=19.95                                 | 1: 7.31                                     |   | 98.0                      | 62.4     | 22        | ...  | "                   |
| " 4      | 3,290     | "       | "         | 1,058             | "                | "           | 29.61          | 1.35                         | 44.41   | 61=34.77                                 | 1: 10.56                                    |   | 100.0                     | 61.4     | 40        | ...  | "                   |
| " 5      | 2,500     | "       | "         | 1,050             | "                | "           | 4.50           | 1.40                         | 35.00   | 48=27.36                                 | 1: 10.94                                    |   | 102.5                     | 74.8     | 63        | c.c. v                                       | "                   |
| " 6      | 3,630     | "       | "         | 1,046             | "                | "           | 21.78          | 1.30                         | 47.19   | 36=20.52                                 | 1: 5.65                                     |   | 104.0                     | 74.3     | 66        | " x  | "                   |
| " 7      | 4,610     | "       | "         | 1,048             | "                | "           | 27.66          | 1.15                         | 53.01   | 43=21.5                                  | 1: 5.32                                     |   | 97.0                      | 68.9     | 27        | " x  | "                   |
| " 8      | 2,480     | "       | "         | 1,053             | "                | "           | 14.50          | 1.40                         | 34.72   | 45=25.65                                 | 1: 10.34                                    |   | 94.0                      | 62.9     | 36        | " x  | "                   |
| " 9      | 3,860     | "       | "         | 1,052             | "                | "           | 3.86           | 1.60                         | 61.76   | 32=18.25                                 | 1: 4.72                                     | 1: 7.21   | 99.0                      | 62.9     | 27        | " x  | "                   |
| " 10     | 2,350     | "       | "         | 1,050             | "                | "           | 3.45           | 1.65                         | 38.77   | 40=22.80                                 | 1: 9.70                                     |   | 101.0                     | 65.4     | 52        | " x  | "                   |
| " 11     | 2,900     | "       | "         | 1,055             | "                | "           | 49.30          | 1.70                         | 49.30   | 51=29.07                                 | 1: 10.02                                    |   | 103.0                     | 61.4     | 43        | " x  | "                   |
| " 12     | 2,700     | "       | "         | 1,056             | "                | "           | 45.90          | 1.80                         | 49.60   | 38=21.66                                 | 1: 8.02                                     |   | 104.5                     | 71.4     | 30        | xxiiss                                       | "                   |
| " 13     | 2,500     | "       | "         | 1,058             | "                | "           | 50.00          | 2.35                         | 53.77   | 35=19.95                                 | 1: 7.98                                     |   | 100.5                     | 70.4     | 30        | xxv  | "                   |
| " 14     | 2,100     | "       | "         | 1,050             | "                | "           | 4.35           | 2.40                         | 50.40   | 35=19.95                                 | 1: 9.60                                     |   | 100.5                     | 67.9     | 58        | xxv  | "                   |
| " 15     | 3,810     | "       | "         | 1,052             | "                | "           | 23.62          | 2.10                         | 80.01   | 23=13.11                                 | 1: 3.44                                     |   | 100.0                     | 70.4     | 29        | xxv  | "                   |
| " 16     | 2,910     | "       | "         | 1,053             | "                | "           | 17.04          | 2.60                         | 75.66   | 27=15.39                                 | 1: 5.47                                     | 1: 5.53   | 101.5                     | 66.4     | 28        | xxv  | "                   |
| " 17     | 3,400     | "       | "         | 1,049             | "                | "           | 3.40           | 2.30                         | 78.20   | 33=18.81                                 | 1: 5.53                                     |   | 100.5                     | 68.9     | 36        | xxv  | "                   |
| " 18     | 3,500     | "       | "         | 1,048             | "                | "           | 3.75           | 2.35                         | 82.25   | 23=13.11                                 | 1: 3.75                                     |   | 102.0                     | 67.9     | 29        | xxv  | "                   |
| " 19     | 2,700     | "       | "         | 1,048             | "                | "           | 2.94           | 2.90                         | 78.30   | 27=15.39                                 | 1: 5.70                                     |   | 104.5                     | 71.9     | 37        | xxvi iss                                     | "                   |
| " 20     | 4,600     | "       | "         | 1,047             | "                | "           | 4.50           | 2.30                         | 103.50  | 26=14.82                                 | 1: 3.29                                     |   | 103.5                     | 73.4     | 50        | xx   | "                   |
| " 21     | 2,780     | "       | "         | 1,051             | "                | "           | 17.23          | 2.70                         | 75.06   | 28=15.96                                 | 1: 5.74                                     |   | 105.5                     | 70.9     | 69        | xx   | "                   |
| " 22     | 3,100     | "       | "         | 1,050             | "                | "           | 3.10           | 2.50                         | 86.80   | 24=13.68                                 | 1: 4.41                                     |   | 104.5                     | 73.8     | 48        | xx   | "                   |
| " 23     | 2,730     | "       | "         | 1,050             | "                | "           | 30.03          | 3.05                         | 83.26   | 26=14.82                                 | 1: 5.43                                     | 1: 5.93   | 105.0                     | 75.8     | 41        | xx   | "                   |
| " 24     | 2,670     | "       | "         | 1,051             | "                | "           | 2.85           | 3.30                         | 88.11   | 32=18.24                                 | 1: 6.83                                     |   | 106.5                     | 71.9     | 21        | xx   | "                   |
| " 25     | 2,210     | "       | "         | 1,050             | "                | "           | 17.68          | 2.80                         | 61.88   | 35=19.95                                 | 1: 9.03                                     |   | 107.5                     | 68.9     | 23        | xx   | "                   |
| " 26     | 2,210     | "       | "         | 1,047             | "                | "           | 4.42           | 2.40                         | 53.04   | 39=22.23                                 | 1: 10.06                                    |   | 105.0                     | 70.9     | 58        | xxiiss                                       | "                   |
| " 27     | 2,830     | "       | "         | 1,047             | "                | "           | 2.95           | 2.40                         | 67.92   | 32=18.24                                 | 1: 6.44                                     |   | 103.1                     | 69.9     | 61        | xxv  | "                   |
| " 28     | 2,850     | "       | "         | 1,046             | "                | "           | 17.67          | 2.65                         | 75.52   | 31=17.67                                 | 1: 6.20                                     |   | 101.5                     | 67.4     | 55        | xxv  | "                   |
| " 29     | 3,250     | "       | "         | 1,048             | "                | "           | 3.25           | 2.50                         | 81.25   | 22=12.54                                 | 1: 3.86                                     |   | 97.5                      | 63.9     | 55        | xxv  | "                   |
| " 30     | 3,560     | "       | "         | 1,046             | "                | "           | 3.56           | 2.30                         | 81.88   | 21=11.97                                 | 1: 3.08                                     | 1: 4.49   | 98.5                      | 68.9     | 56        | xxv  | "                   |
| May 1    | 3,220     | "       | "         | 1,050             | "                | "           | 0.00           | 2.35                         | 75.90   | 26=14.82                                 | 1: 4.59                                     |   | 98.5                      | 70.9     | 56        | xxv  | "                   |
| " 2      | 3,480     | "       | "         | 1,047             | "                | "           | 4.05           | 2.20                         | 76.56   | 25=14.25                                 | 1: 4.09                                     |   | 98.0                      | 70.9     | 56        | xxv  | "                   |
| " 3      | 3,000     | "       | "         | 1,053             | "                | "           | 18.60          | 2.54                         | 76.20   | 18=10.26                                 | 1: 3.42                                     |   | 104.0                     | 70.9     | 42        | xxiiss                                       | "                   |
| " 4      | 2,710     | "       | "         | 1,046             | "                | "           | 2.71           | 2.24                         | 60.70   | 36=20.52                                 | 1: 7.57                                     |   | 101.0                     | 71.4     | 35        | xxx  | "                   |
| " 5      | 3,870     | "       | "         | 1,043             | "                | "           | Nil.           | 1.50                         | 58.05   | 28=15.96                                 | 1: 4.12                                     |   | 104.5                     | 70.9     | 42        | xxx  | "                   |
| " 6      | 3,010     | "       | "         | 1,052             | "                | "           | 3.65           | 2.30                         | 69.23   | 35=19.95                                 | 1: 6.63                                     | 1: 4.40   | 104.0                     | 70.9     | 59        | xxx  | "                   |
| " 7      | 2,580     | "       | "         | 1,051             | "                | "           | Nil.           | 2.70                         | 69.66   | 26=14.82                                 | 1: 5.74                                     |   | 100.0                     | 69.4     | 58        | xxx  | "                   |
| " 8      | 3,650     | "       | "         | 1,047             | "                | "           | "              | 2.50                         | 91.25   | 19=10.83                                 | 1: 2.96                                     |   | 97.5                      | 69.4     | 50        | xxx  | "                   |
| " 9      | 5,150     | "       | "         | 1,044             | Trace.           | "           | "              | 2.04                         | 105.06  | 19=10.83                                 | 1: 2.10                                     |   | 98.0                      | 68.4     | 56        | xv   | "                   |
| " 10     | 2,850     | "       | "         | 1,053             | Nil.             | "           | "              | 2.80                         | 79.80   | 21=11.97                                 | 1: 4.20                                     |   | 98.0                      | 69.9     | 63        | xxx  | "                   |
| " 11     | 4,700     | "       | "         | 1,044             | "                | "           | "              | 2.20                         | 103.40  | 28=15.96                                 | 1: 3.39                                     |   | 100.5                     | 69.4     | 50        | xxx  | "                   |
| " 12     | 5,250     | "       | "         | 1,041             | "                | "           | "              | 2.00                         | 105.00  | 22=12.54                                 | 1: 2.38                                     |   | 99.5                      | 68.9     | 41        | xxx  | "                   |
| " 13     | 5,380     | "       | "         | 1,048             | "                | "           | "              | 2.90                         | 98.02   | 21=11.97                                 | 1: 3.54                                     |   | 100.0                     | 69.9     | 45        | xxx  | "                   |
| " 14     | 2,000     | "       | "         | 1,058             | "                | "           | "              | 5.00                         | 100.00  | 18=10.26                                 | 1: 5.13                                     | 1: 3.26   | 98.5                      | 72.9     | 56        | xxx  | "                   |
| " 15     | 2,210     | "       | "         | 1,054             | "                | "           | "              | 4.30                         | 95.03   | 23=13.11                                 | 1: 5.93                                     |   | 97.0                      | 70.9     | 57        | xxiiss                                       | "                   |
| " 16     | 3,460     | "       | "         | 1,039             | "                | "           | "              | 2.50                         | 86.50   | 14=7.98                                  | 1: 2.30                                     |   | 96.0                      | 67.4     | 58        | xxx  | "                   |
| " 17     | 4,200     | "       | "         | 1,031             | "                | "           | "              | 1.60                         | 67.20   | 18=10.26                                 | 1: 2.44                                     |   | 95.5                      | 70.9     | 59        | xxx  | "                   |
| " 18     | 3,910     | "       | "         | 1,036             | "                | "           | "              | 2.20                         | 86.02   | 24=13.68                                 | 1: 3.47                                     |   | 97.5                      | 72.4     | 65        | xxx  | "                   |
| " 19     | 3,800     | "       | "         | 1,041             | "                | "           | "              | 2.40                         | 91.20   | 14=7.98                                  | 1: 2.10                                     | 1: 2.63   | 99.0                      | 70.4     | 63        | xxx  | "                   |
| " 20     | 3,800     | "       | "         | 1,035             | "                | "           | "              | 2.20                         | 83.60   | 17=9.69                                  | 1: 2.55                                     |   | 97.0                      | 72.4     | 58        | xxx  | "                   |
| " 21     | 3,460     | "       | "         | 1,036             | "                | "           | "              | 2.30                         | 79.58   | 14=7.98                                  | 1: 2.30                                     |   | 97.0                      | 69.9     | 56        | xv   | Inoculated.         |
| " 22     | 4,020     | "       | "         | 1,031             | "                | "           | "              | 1.90                         | 76.38   | 27=15.39                                 | 1: 3.83                                     |   | 98.5                      | 72.4     | 57        | ...  | Absent.             |
| " 23     | 3,950     | "       | "         | 1,033             | "                | "           | "              | 2.15                         | 84.92   | 24=13.68                                 | 1: 3.46                                     | 1: 3.54   | 101.1                     | 73.8     | 66        | ...  | "                   |
| " 24     | 3,900     | "       | "         | 1,030             | "                | "           | "              | 2.00                         | 78.00   | 25=14.25                                 | 1: 3.65                                     |   | 111.0                     | 75.3     | 62        | ...  | "                   |
| " 25     | 4,560     | "       | "         | 1,037             | "                | "           | "              | 1.95                         | 88.92   | 26=14.82                                 | 1: 3.25                                     |   | 10.5                      | 72.9     | 60        | ...  | "                   |
| " 26     | 4,100     | "       | "         | 1,038             | "                | "           | "              | 2.00                         | 82.00   | 22=12.54                                 | 1: 3.06                                     |   | 99.5                      | 72.4     | 59        | ...  | Few.                |
| " 27     | 6,540     | "       | "         | 1,033             | Trace            | "           | "              | 2.40                         | 156.96  | 4=2.28                                   | 1: 0.35                                     | 1: 1.46   | 100.5                     | 70.4     | 56        | ...  | "                   |
| " 28     | 6,350     | "       | "         | 1,034             | Heavy turbidity. | "           | "              | 4.10                         | 219.35  | 15=8.55                                  | 1: 1.50                                     |   | 100.0                     | 71.5     | 58        | c.c. xv                                      | "                   |
| " 29     | 2,970     | "       | "         | 1,042             | 1.78             | "           | "              | 5.40                         | 160.38  | 25=14.25                                 | 1: 4.79                                     | 1: 4.79   | 98.5                      | 70.9     | 57        | xxx  | Absent              |
| " 30     | 3,560     | "       | "         | 1,035             | Heavy turbidity. | "           | "              | 2.80                         | 99.68   | 26=14.82                                 | 1: 4.16                                     |   | 102.5                     | 71.9     | 60        | xxviii                                       | Few.                |
| " 31     | 6,490     | "       | "         | 1,028             | "                | "           | "              | 2.50                         | 162.95  | 10=5.68                                  | 1: 0.87                                     | 1: 2.62   | 100.0                     | 74.3     | 61        | xv Ars.                                      | "                   |
| June 1   | 2,980     | "       | "         | 1,030             | Trace.           | "           | "              | 2.65                         | 78.97   | 24=13.68                                 | 1: 4.59                                     |   | 99.5                      | 75.3     | 61        | xxx Ars.                                     | "                   |
| " 2      | 1,500     | "       | "         | 1,046             | "                | "           | "              | 3.60                         | 54.00   | 16=9.12                                  | 1: 6.08                                     |   | 96.5                      | 74.8     | 59        | xv Ars.                                      | Absent              |
| " 3      | 1,880     | "       | "         | 1,046             | Nil.             | "           | "              | 3.40                         | 63.92   | 6=3.42                                   | 1: 1.82                                     |   | 96.0                      | 74.8     | 61        | xv   | "                   |
| " 4      | 2,600     | "       | "         | 1,042             | Slightly turbid. | "           | "              | 2.46                         | 63.96   | 22=12.54                                 | 1: 4.82                                     | 1: 4.04   | 97.5                      | 73.8     | 60        | xxiv   | "                   |
| " 5      | 2,490     | "       | Neutral.  | 1,035             | "                | "           | "              | 1.80                         | 44.82   | 16=9.12                                  | 1: 3.63                                     |   | 97.0                      | 72.9     | 63        | xxvi   | "                   |
| " 6      | 9,100     | "       | Alkaline. | 1,024             | "                | "           | "              | 1.00                         | 91.00   | 17=9.69                                  | 1: 1.06                                     | 1: 1.06   | 96.5                      | 73.8     | 69        | xv   | Few.                |
| " 7      | 6,660     | "       | "         | 1,028             | "                | "           | "              | 2.54                         | 169.16  | ...                                      | ...   |   | 96.0                      | 72.4     | 67        | xi   | Absent              |
| " 8      | 4,650     | "       | "         | 1,029             | "                | "           | "              | 2.16                         | 100.44  | 26=14.82                                 | 1: 3.18                                     | 1: 1.31   | 96.0                      | 72.4     | 86        | xxvii  | "                   |



| Date.     | Quantity. | Colour. | Reaction.     | Specific Gravity. | Albumen.         | Phosphates.     | Hippuric Acid. | Urea, Grammes per 100 c.c. | Total Urea excreted in Urine during twenty-four hours. | Water taken during twenty-four hours. | Ratio of Urine passed to Water taken daily. | Ratio of Urine passed to Water drunk during periods of Health and Disease. | TEMPERATURE IN SHADE °F. |          | Humidity. | Donovan's Solution administered daily c. c. | Condition of Blood. |
|-----------|-----------|---------|---------------|-------------------|------------------|-----------------|----------------|----------------------------|--|---------------------------------------|---|--|--------------------------|----------|-----------|---|---------------------|
|           |           |         |               |                   |                  |                 |                |                            |  |                                       |   |  | Maximum.                 | Minimum. |           |   |                     |
| 1894.     |           |         |               |                   | Grammes.         |                 | Grammes.       |                            | Grammes.   | Pints. Litres.                        |   |  |                          |          |           |   |                     |
| June 9... | 6,080     | Turbid  | Faintly Acid. | 1.025             | Slightly turbid. | Nil             | Nil            | 1.20                       | 73.08  | 20=11.36                              | 1 : 1.86                                    | 1 : 1.08   | 89.5                     | 73.8     | 72        | c.c. xxx                                    | Few.                |
| " 10...   | 11,685    | "       | Alkaline.     | 1.018             | "                | "               | "              | 0.64                       | 74.78  | 14= 7.98                              | 1 : 0.68                                    |  | 90.5                     | 72.9     | 93        | " xxi                                       | "                   |
| " 11...   | 7,790     | "       | "             | 1.027             | Clear            | "               | "              | 1.50                       | 116.85   | 16= 9.12                              | 1 : 1.17                                    |  | 83.6                     | 68.9     | 74        | " xviii                                     | Absent.             |
| " 12...   | 3,400     | "       | "             | 1.033             | Turbid.          | "               | "              | 2.32                       | 78.88  | 24=18.68                              | 1 : 4.02                                    | 1 : 1.02   | 84.5                     | 71.4     | 72        | " xxx                                       | "                   |
| " 13...   | 3,900     | "       | Neutral.      | 1.032             | "                | "               | "              | 1.72                       | 67.08  | 15= 8.55                              | 1 : 2.19                                    |  | 83.6                     | 70.4     | 90        | " xxii                                      | "                   |
| " 14...   | 5,945     | "       | Alkaline.     | 1.032             | "                | "               | "              | 1.20                       | 71.34  | 16= 9.12                              | 1 : 1.88                                    |  | 86.0                     | 70.4     | 93        | " xxiv                                      | "                   |
| " 15...   | 4,580     | "       | "             | 1.036             | "                | "               | "              | 1.45                       | 66.41  | 18=10.26                              | 1 : 2.24                                    | 1 : 1.53   | 80.5                     | 72.9     | 84        | " xxvii                                     | Few.                |
| " 16...   | 9,180     | "       | "             | 1.032             | "                | "               | "              | 1.42                       | 130.35   | 14= 7.98                              | 1 : 0.86                                    |  | 86.5                     | 72.4     | 84        | " xxi                                       | "                   |
| " 17...   | 7,115     | "       | "             | 1.032             | "                | "               | "              | 2.35                       | 167.20   | 18=10.26                              | 1 : 1.44                                    |  | 80.1                     | 71.4     | 84        | " xxvii                                     | "                   |
| " 18...   | 5,250     | "       | "             | 1.030             | "                | "               | "              | 1.96                       | 102.90   | 20=11.36                              | 1 : 2.16                                    | 1 : 1.17   | 86.0                     | 72.4     | 67        | " xxx                                       | "                   |
| " 19...   | 13,640    | "       | "             | 1.022             | "                | "               | "              | 1.60                       | 218.24   | 20=11.36                              | 1 : 0.83                                    |  | 90.0                     | 72.9     | 69        | " xxx                                       | Absent.             |
| " 20...   | 10,710    | "       | "             | 1.026             | "                | "               | "              | 1.80                       | 192.78   | 20=11.36                              | 1 : 1.06                                    |  | 90.0                     | 73.8     | 70        | " xxx                                       | "                   |
| " 21...   | 7,925     | "       | Acid          | 1.022             | "                | "               | "              | 1.25                       | 99.06  | 23=13.11                              | 1 : 1.65                                    | 1 : 1.28   | 87.5                     | 73.4     | 66        | " xxx                                       | "                   |
| " 22...   | 7,015     | "       | Alkaline.     | 1.023             | "                | "               | "              | 1.28                       | 89.79  | 18=10.26                              | 1 : 1.46                                    |  | 87.5                     | 71.4     | 74        | " xxii                                      | "                   |
| " 23...   | 7,125     | "       | "             | 1.033             | "                | "               | "              | 1.30                       | 92.62  | 20=11.36                              | 1 : 1.59                                    |  | 82.6                     | 72.4     | 65        | " xxx                                       | Few.                |
| " 24...   | 5,635     | "       | "             | 1.038             | "                | "               | "              | 2.05                       | 115.51   | 16= 9.12                              | 1 : 1.61                                    | 1 : 1.28   | 89.5                     | 71.9     | 78        | " xxiv                                      | "                   |
| " 25...   | 10,800    | "       | "             | 1.032             | "                | "               | "              | 1.85                       | 210.60   | 23=13.11                              | 1 : 1.21                                    |  | 88.0                     | 70.9     | 79        | " xxx                                       | "                   |
| " 26...   | 9,290     | "       | "             | 1.025             | "                | "               | "              | 1.74                       | 161.64   | 22=12.54                              | 1 : 1.35                                    |  | 85.0                     | 71.9     | 65        | " xxix                                      | "                   |
| " 27...   | 15,370    | "       | "             | 1.022             | "                | "               | "              | 1.75                       | 268.97   | 28=15.96                              | 1 : 1.03                                    | 1 : 1.03   | 86.5                     | 72.4     | 70        | " xlv                                       | "                   |
| " 28...   | 10,765    | "       | "             | 1.033             | "                | "               | "              | 2.21                       | 237.90   | 24=13.68                              | 1 : 1.27                                    |  | 88.0                     | 70.9     | 88        | " lx  | "                   |
| " 29...   | 19,700    | "       | "             | 1.019             | "                | "               | "              | 1.25                       | 246.25   | 25=14.25                              | 1 : 0.72                                    |  | 89.0                     | 70.9     | 70        | " lx  | Absent.             |
| " 30...   | 12,500    | "       | "             | 1.012             | "                | "               | "              | 2.10                       | 262.50   | 20=11.36                              | 1 : 0.90                                    | 1 : 0.24   | 84.5                     | 72.4     | 82        | " lx  | "                   |
| July 1... | 3,950     | "       | Acid          | 1.030             | 7.26             | "               | "              | 2.00                       | 199.00   | 20=11.36                              | 1 : 1.4                                     |  | 88.0                     | 71.9     | 64        | " lx  | "                   |
| " 2...    | 10,660    | "       | "             | 1.023             | 6.39             | "               | "              | 1.20                       | 127.42   | 29=16.51                              | 1 : 1.55                                    | 1 : 1.14   | 86.0                     | 70.9     | 76        | " lx  | "                   |
| " 3...    | 11,600    | "       | "             | 1.023             | 3.82             | "               | "              | 0.97                       | 112.52   | 24=13.68                              | 1 : 1.18                                    |  | 86.5                     | 70.9     | 93        | Ar. Grs. ii                                 | "                   |
| " 4...    | 10,650    | "       | "             | 1.024             | Trace...         | "               | "              | 1.20                       | 127.80   | 32=18.24                              | 1 : 1.71                                    |  | 84.5                     | 70.9     | 82        | c.c. xlv                                    | "                   |
| " 5...    | 14,360    | "       | "             | 1.024             | 4.73             | "               | "              | 1.18                       | 169.45   | 29=16.51                              | 1 : 1.15                                    | 1 : 1.03   | 86.0                     | 71.4     | 81        | Ar. Grs. v                                  | "                   |
| " 6...    | 8,200     | "       | "             | 1.039             | 3.28             | "               | "              | 1.86                       | 152.52   | 24=13.68                              | 1 : 1.67                                    |  | 87.5                     | 70.9     | 82        | c.c. xxx                                    | "                   |
| " 7...    | 7,660     | "       | "             | 1.025             | Turbid.          | "               | "              | 1.35                       | 103.41   | 20=11.36                              | 1 : 1.48                                    |  | 82.6                     | 70.9     | 80        | Ar. Grs. vii                                | "                   |
| " 8...    | 7,000     | "       | "             | 1.020             | Trace...         | "               | "              | 0.80                       | 56.00  | 20=11.36                              | 1 : 1.62                                    | 1 : 1.03   | 87.5                     | 70.4     | 82        | Ar. Grs. ix                                 | "                   |
| " 9...    | 11,760    | "       | "             | 1.026             | "                | "               | "              | 1.55                       | 192.28   | 14= 7.98                              | 1 : 0.68                                    |  | 81.0                     | 70.4     | 90        | c.c. xv                                     | "                   |
| " 10...   | 11,080    | "       | "             | 1.025             | "                | Trace           | "              | 1.49                       | 155.12   | 13= 7.41                              | 1 : 0.67                                    |  | 77.6                     | 69.4     | 97        | Ar. Grs. xii                                | "                   |
| " 11...   | 8,920     | "       | "             | 1.023             | "                | "               | "              | 1.00                       | 89.20  | 11= 7.98                              | 1 : 0.89                                    | 1 : 0.24   | 72.2                     | 69.9     | 93        | " xii                                       | "                   |
| " 12...   | 9,220     | "       | Alkaline.     | 1.023             | "                | "               | "              | 1.15                       | 116.03   | 11= 6.27                              | 1 : 0.68                                    |  | 75.5                     | 68.4     | 93        | " vss                                       | "                   |
| " 13...   | 10,270    | "       | "             | 1.025             | "                | "               | "              | 1.05                       | 107.88   | 4= 2.28                               | 1 : 0.22                                    |  | 74.2                     | 68.9     | 86        | " 5.9                                       | "                   |
| " 14...   | 10,800    | "       | "             | 1.021             | "                | "               | "              | 1.10                       | 118.80   | 5= 2.85                               | 1 : 0.26                                    | 1 : 0.24   | 82.1                     | 70.9     | 86        | " 2.0                                       | "                   |
| " 15...   | 11,890    | "       | "             | 1.023             | "                | "               | "              | 1.20                       | 141.60   | 4= 2.28                               | 1 : 0.19                                    |  | 78.5                     | 68.9     | 93        | Don. Sol. 3.3                               | "                   |
| " 16...   | 10,570    | "       | "             | 1.021             | "                | Heavy Sediment. | "              | 0.98                       | 106.52   | 0= 0.00                               | 1 : 0.90                                    |  | 77.6                     | 65.9     | 93        | " 3.0                                       | "                   |
| " 17...   | 12,000    | "       | Neutral...    | 1.026             | "                | Trace           | "              | 1.5                        | 186.00   | 11= 6.27                              | 1 : 0.52                                    | 1 : 0.14   | 82.6                     | 71.4     | 86        | " 2.0                                       | "                   |
| " 18...   | 9,110     | "       | Alkaline.     | 1.031             | "                | Nil             | Nil            | 1.90                       | 173.09   | 10= 5.70                              | 1 : 0.62                                    |  | 85.5                     | 70.9     | 80        | Don. Sol. 3.3                               | "                   |
| " 19...   | 12,100    | "       | Faintly Acid. | 1.026             | 5.70             | "               | "              | 1.80                       | 223.20   | 10= 5.70                              | 1 : 0.46                                    |  | 83.1                     | 69.9     | 90        | Ars. Grs. iv                                | Few.                |
| " 20...   | 12,200    | "       | Sl. Acid...   | 1.024             | Trace...         | "               | "              | 1.90                       | 231.80   | 9= 5.13                               | 1 : 0.42                                    | 1 : 0.04   | "                        | "        | "         | Don. Sol. 3.3                               | "                   |
| " 21...   | 17,510    | "       | Acid          | 1.022             | "                | "               | "              | 1.80                       | 315.18   | 14= 7.98                              | 1 : 0.45                                    |  | 77.6                     | 70.9     | 93        | Ars. Grs. iii                               | "                   |
| " 22...   | 10,020    | "       | "             | 1.031             | "                | "               | "              | 1.90                       | 228.38   | 7= 3.99                               | 1 : 0.33                                    |  | 78.6                     | 70.9     | 84        | Ars. Grs. i                                 | "                   |
| " 23...   | 8,000     | "       | "             | 1.018             | Nil              | "               | "              | 1.35                       | 108.00   | 1= 0.57                               | 1 : 0.07                                    | 1 : 0.04   | 78.1                     | 70.4     | 86        | "   | Few.                |
| " 24...   | 3,400     | "       | "             | 1.019             | "                | "               | "              | 1.34                       | 38.76  | 0= 0.00                               | 1 : 0.00                                    |  | 80.5                     | 69.4     | 83        | "   | Absent.             |

24th July 1894, Death at 7-15 A.M.

*Remarks.*—For a period of seven days, this animal was kept under observation, and the physiological problems relating to the ingestion and excretion of Nitrogen during health were investigated. The Double Iodides of Arsenic and Mercury were then administered to the animal in increasing doses during a period of 46 days. A total of 158 grains of the tri-iodide of Arsenic and 158 grains of the bin-iodide of Mercury being given. On the evening of the day upon which the Iodides were discontinued the animal was inoculated with 0.8 c.c. of blood containing swarms of hamatozoa. The period of incubation lasted nearly 5 days, and then the animal passed through the ordinary phases of Surra, but in this case in a less virulent form than even Horse No. XCVIII which underwent a preliminary treatment with Arsenic. For the first fifty-four days of disease which lasted 59 days in all, the hamatozoon never exceeded few in the blood, but just before death rose to very numerous. So that there is no doubt that the preliminary treatment had a marked effect upon the course of the malady.

The investigations commenced in health were continued throughout the disease, and the following data are now recorded:—



|                           | Average daily<br>Urine.<br>c.c. | Average daily<br>Urea.<br>Grammes. | Average daily<br>Water drunk.<br>Litres. | Ratio of Urea to<br>Urine. |
|---------------------------|---------------------------------|------------------------------------|--|----------------------------|
| Health ...                | 2,721                           | 38.89                              | 30.78                                    | 1 : 69.9                   |
| Preliminary Treatment ... | 3,666                           | 75.09                              | 15.70                                    | 1 : 44.8                   |
| Latent Period ...         | 4,107                           | 82.05                              | 14.53                                    | 1 : 50.0                   |
| Paroxysms ...             | 8,510                           | 156.82                             | 9.59                                     | 1 : 64.2                   |
| Intermissions ...         | 8,430                           | 124.95                             | 8.94                                     | 1 : 67.4                   |
| Whole Period ...          | 5,938                           | 102.07                             | 13.12                                    | 1 : 58.2                   |

## HORSE No. CIII.

Grey Entire, Country-Bred, brought from Wái, a village beneath the Panchgani Gháts, well known as a fever locality and liable to inundation during the rains, and therefore probably a Surra centre also.

June 29th, 1894, State on Admission.—The animal is aged and in fairly good condition. The visible mucous membranes are clear, the skin cool, and the temperature within normal limits, 38.2°C. Pulse 38, R. 28. The extremities are coarse, but there is no swelling or œdema present. The appetite is good, and the excreta normal in character.

| Month and Date. | Temperature °C. |        |        | Pulse. | Respiration. | Day of Disease. | Condition of Blood. | Medicine administered.                |               | REMARKS.   |
|-----------------|-----------------|--------|--------|--------|--------------|-----------------|---------------------|---------------------------------------|---------------|--|
|                 | A.M.            | I.P.M. | 5.P.M. |        |              |                 |                     | A.M.                                  | P.M.          |  |
| 1894.           |                 |        |        |        |              |                 |                     | Double Iodide of Arsenic and Mercury. |               |  |
| June 29...      | 38.2            | ...    | 38.2   | ...    | 39           | ...             | 28                  | ...                                   | ...           | cc cc  |
| " 30...         | 37.4            | ...    | 37.5   | 52     | 34           | 16              | 16                  | ...                                   | ...           | v viiiss   |
| July 1...       | 37.3            | ...    | 38.1   | 32     | 30           | 20              | 14                  | ...                                   | ...           | x x  |
| " 2...          | 37.1            | ...    | 38.0   | 32     | 26           | 12              | 12                  | ...                                   | ...           | x x  |
| " 3...          | 37.2            | ...    | 38.0   | 24     | 28           | 12              | 10                  | ...                                   | ...           | x x  |
| " 4...          | 36.7            | ...    | 38.3   | 24     | 30           | 16              | 14                  | ...                                   | ...           | x xv   |
| " 5...          | 37.4            | ...    | 38.2   | 30     | 30           | 14              | 16                  | ...                                   | ...           | xiiss xiiss  |
| " 6...          | 36.6            | ...    | 38.1   | 32     | 41           | 16              | 20                  | ...                                   | ...           | xiiss xiiss  |
| " 7...          | 36.7            | ...    | 38.0   | 22     | 34           | 11              | 11                  | ...                                   | ...           | xv xv  |
| " 8...          | 37.0            | ...    | 37.7   | 26     | 32           | 12              | 12                  | ...                                   | ...           | xv xv  |
| " 9...          | 36.6            | ...    | 37.3   | 24     | 32           | 12              | 12                  | ...                                   | ...           | xv xv  |
| " 10...         | 36.4            | ...    | 37.2   | 28     | 32           | 12              | 12                  | ...                                   | ...           | xviiiss xviiiss  |
| " 11...         | 36.4            | ...    | 37.2   | 20     | 40           | 12              | 12                  | ...                                   | ...           | xviiiss xviiiss  |
| " 12...         | 36.1            | ...    | 36.8   | 24     | 24           | 12              | 12                  | ...                                   | ...           | xviiiss xviiiss  |
| " 13...         | 36.1            | ...    | 36.8   | 24     | 26           | 12              | 12                  | ...                                   | ...           | xviiiss xviiiss  |
| " 14...         | 36.1            | ...    | 37.7   | 20     | 40           | 12              | 12                  | ...                                   | ...           | xviiiss xviiiss  |
| " 15...         | 36.8            | ...    | 37.4   | 32     | 20           | 12              | 12                  | ...                                   | ...           | xviiiss xviiiss  |
| " 16...         | 36.5            | ...    | 37.1   | 24     | 48           | 10              | 16                  | ...                                   | ...           | xviiiss xviiiss  |
| " 17...         | 36.3            | ...    | 37.5   | 24     | 48           | 12              | 9                   | ...                                   | ...           | xviiiss xviiiss  |
| " 18...         | 37.2            | ...    | 37.7   | 24     | 44           | 12              | 12                  | ...                                   | ...           | xx xx  |
| " 19...         | 36.4            | ...    | 37.0   | 20     | 40           | 12              | 10                  | ...                                   | ...           | xx xx  |
| " 20...         | 35.7            | ...    | 36.4   | 20     | 48           | 8               | 12                  | ...                                   | ...           | xx xx  |
| " 21...         | 35.8            | ...    | 37.0   | 24     | 52           | 12              | 12                  | ...                                   | ...           | xxiiss xxiiss  |
| " 22...         | 36.5            | ...    | 38.0   | 52     | 28           | 12              | 12                  | ...                                   | ...           | xxiiss xxiiss  |
| " 23...         | 37.3            | ...    | 37.7   | 26     | 28           | 12              | 12                  | ...                                   | ...           | xxv xxv  |
| " 24...         | 36.7            | ...    | 37.4   | 24     | 24           | 8               | 12                  | ...                                   | ...           | xxv xxv  |
| " 25...         | 37.7            | ...    | 38.3   | 24     | 28           | 12              | 8                   | ...                                   | ...           | xxvi xxvi  |
| " 26...         | 39.0            | ...    | 40.0   | 28     | 28           | 10              | 12                  | ...                                   | ...           | xxvi xxvi  |
| " 27...         | 39.6            | ...    | 40.1   | 32     | 28           | 12              | 12                  | ...                                   | Heal-<br>thy. | xxvii xxvii  |
| " 28...         | 40.1            | ...    | 40.2   | 48     | 32           | 12              | 12                  | ...                                   | ...           | xxvii xxvii  |
| " 29...         | 39.6            | 39.6   | 40.2   | 31     | 34           | 12              | 11                  | 1                                     | Few.          | xxvii ...  |
| " 30...         | 38.0            | 38.4   | 39.6   | 30     | 34           | 12              | 12                  | 2                                     | "             | ... ...  |
|                 |                 |        |        |        |              |                 |                     |                                       |               | Conjunctival membranes much injected and petechiated, discharge from right nostril.  |
|                 |                 |        |        |        |              |                 |                     |                                       |               | Conjunctival membranes much injected, yellow, and petechiated.   |
|                 |                 |        |        |        |              |                 |                     |                                       |               | Conjunctival membranes much injected, yellow and petechiated, lower extremities of all four limbs swollen; slight general urticarial eruption. |

| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |     | Day of Disease. | Condi-<br>tion of<br>Blood. | Medicine administered.                                     |      | REMARKS.   |
|-----------------|-----------------|--------|--------|--------|------|--------------|-----|-----------------|-----------------------------|--|------|--|
|                 | A.M.            | 1 P.M. | 5 P.M. |        |      |              |     |                 |                             | A.M.   | P.M. |  |
| 1894.           |                 |        |        |        |      |              |     |                 |                             | Double Iodide of<br>Arsenic and<br>Mercury - <i>contd.</i> |      |  |
| July 31...      | 39.2            | 40.4   | 39.0   | 38     | 51   | 11           | 48  | 3               | Very<br>nume-<br>rous.      | ...  | ...  | Conjunctival mem-<br>branes unchang-<br>ed, limbs and<br>sheath swollen;<br>eruption conti-<br>nues. |
| August 1...     | ...             | ...    | ...    | Death  | at 3 | P.M.         | ... | 4               | ...                         | ...  | ...  |  |

*August 1st, 1894, Autopsy* seven hours after death. The abdomen is considerably distended with gas, and there is a slight discharge of a yellow coloured fluid from the left nostril. There is an absence of swelling and œdema from the extremities.

*Thorax.*—There is no fluid in the pleural cavities or adhesions of the pleura.

*Lungs.*—The apices are the seat of a localized emphysema, and there are several extensive subpleural extravasations varying in colour from dark red to purple. The organs are distended with air, and on section the tissues appear fairly healthy.

The pericardial sac contains about one ounce of an orange-coloured fluid.

*Heart.*—Weighs 5 lbs. 4 ozs. Externally the base of the organ is surrounded by a yellow coloured exudation having the consistency of jelly, and this material is dotted over with small dark-red coloured petechiæ.

*On section.*—The right side of the heart is somewhat dilated, and contains dark coloured clots, and there are a few small black coloured sub-endocardial petechiæ. The left side is contracted, but also contains a small amount of dark clot. There are a few sub-endocardial petechiæ. The valves are healthy.

The peritoneal cavity contains several ounces of a semi-turbid amber-coloured fluid.

*Liver.*—Weighs 10 lbs. 9½ ozs. There are a few pearly white calcareous bodies dotted over the outer-surface, and Glisson's capsule presents signs of some old perihepatitis. *On section.*—A few calcareous bodies are dotted through the substance of the tissues, which latter are friable.

*Spleen.*—Weighs 3 lbs. 8½ ozs. Externally pale in colour and dotted over with a few brick-red petechiæ. *On section* the tissues are dark-red in colour and firm; follicles normal in size.

*Kidneys.*—The right weighs 1 lb. 4½ ozs.; the left 1 lb. 2½ ozs. The capsules strip easily, the surfaces are both petechiated. *On section* the tissues appear healthy.

*Stomach.*—Distended with semi-digested food, and on section contains a quantity of a yellow coloured fluid. The mucous membrane of the whole organ is dyed a deep yellow, and this is especially noticeable for a distance of two inches on either side of the line of demarcation. Water removes a certain amount of the yellow colour, but it still remains very marked. There are also a few small extravasations observed involving the submucous tissue of villous portion.

*Remarks.*—This animal was obtained for the purpose of subjecting it to a preliminary treatment, with the Double Iodide of Arsenic and Mercury, previous to inoculation with the Surra hæmatozoon, in order to ascertain whether the presence of the drug in the system had any power in counteracting the disease. The animal received between June 29th and July 29th, 1894, 1,074 c.c. of the solution equivalent to 10.95 grammes each of the Iodides of Arsenic and Mercury, or 1.8 grammes Arsenic, 4.8 grammes Mercury, and 15.3 grammes of Iodine. On the morning of the 24th of July the temperature gradually commenced to rise from 36.6°C. and continued until the evening of the 26th, when it registered 40°C. On examination of the blood nothing pathological was discovered; the temperature varied between 39.6°C. and 40.2°C. On the morning of the 29th July the Surra hæmatozoon was found to be present in the blood. Death occurred on the morning of the 1st August.

This animal was isolated; no blood for examination was drawn until the rise of temperature on the morning of the 27th July. Consequently, if at this time inoculation could have taken place owing to the use of soiled instruments—which is impossible, owing to the precautions taken to guard against such accidents—the period elapsing between the inoculation and the appearance of the hæmatozoon would be far shorter than any known latent period, viz. 48 hours. For, when soiled blood is subcutaneously injected in quantity, the latent period of Surra is usually five (5) days, whereas when a scratch is made in the muzzle, as was done in this instance, in order to obtain a drop of blood for microscopical examination, the period of incubation is much extended and generally occupies 7 to 10 days.

It must therefore be taken for granted that this animal contracted Surra at least six weeks previous to its removal from Wai and arrival at the Laboratory Hospital; for in naturally contracted cases of this disease the period of incubation extends over a period of from two to three months as a rule.





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B.  
RAT SURRA

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APPENDIX I.

SUBCUTANEOUS INOCULATION WITH  
SOILED RAT'S BLOOD.

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RESULTS POSITIVE.

HORSES Nos. IX, XXVIII, XLII, LXII.

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## HORSE No. IX.

Subcutaneous inoculation with soiled rat's blood. Maximum swelling at seat of inoculation, 11th day, appearance of hæmatozoon after latent period of 18 days. General urticarial eruption on the 3rd day of disease. Death on the 19th day. Marked pathological changes *post mortem*.

Australian gelding, bay, aged 15 years, healthy, in fair condition.

| Month<br>and Date. | Day of<br>Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | REMARKS. |                |  |
|--------------------|--------------------|-----------------|--------|--------|--------|------|--------------|------|------------------------|----------|----------------|--|
|                    |                    | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        |          |                |  |
| 1890.              |                    |                 |        |        |        |      |              |      |                        |          |                |  |
| Dec.               | 28                 | ...             | ...    | 37.0   | 37.4   | 38.0 | 40           | 52   | 16                     | 20       | Healthy.       | 28th.—Animal inoculated subcutaneously over the left scapula region with 1 c.c. of blood containing numerous hæmatozoa taken from the heart of a rat ( <i>mus decumanus</i> ) immediately after death.   |
| "                  | 29                 | ...             | ...    | 37.2   | 37.4   | 37.5 | 36           | 48   | 18                     | 16       | Absent.        | 29th.—There is some swelling at the seat of inoculation.   |
| "                  | 30                 | ...             | ...    | 36.7   | 37.0   | 37.2 | 40           | 50   | 18                     | 20       | Do. ...        |  |
| "                  | 31                 | ...             | ...    | 38.0   | 38.0   | 37.8 | 40           | 40   | 20                     | 24       | Do. ...        |  |
| 1891.              |                    |                 |        |        |        |      |              |      |                        |          |                |  |
| Jany.              | 1                  | ...             | ..     | 38.0   | 38.0   | 37.8 | 42           | 48   | 18                     | 20       | Absent.        | 1st.—The swelling at the seat of inoculation has increased.  |
| "                  | 2                  | ...             | ...    | 36.4   | 37.0   | 38.0 | 36           | 44   | 16                     | 16       | Do. ...        |  |
| "                  | 3                  | ...             | ...    | 37.2   | 38.0   | 38.1 | 40           | 46   | 18                     | 22       | Do. ...        |  |
| "                  | 4                  | ...             | ...    | 37.0   | 38.4   | 39.0 | 38           | 40   | 18                     | 20       | Do. ...        |  |
| "                  | 5                  | ...             | ...    | 36.7   | 36.9   | 37.1 | 40           | 44   | 20                     | 16       | Do. ...        | 5th.—The swelling is considerably increased in size, is painful to the touch, diam. 2½"  |
| "                  | 6                  | ...             | ...    | 36.6   | 37.5   | 38.0 | 42           | 48   | 22                     | 20       | Do. ...        |  |
| "                  | 7                  | ...             | ...    | 37.5   | 38.0   | 38.2 | 40           | 46   | 18                     | 18       | Do. ...        |  |
| "                  | 8                  | ...             | ...    | 36.8   | 37.7   | 38.1 | 38           | 44   | 22                     | 24       | Do. ...        | 8th.—The swelling is still further increased, tense and tender on manipulation, diam. 3½"  |
| "                  | 9                  | ...             | ...    | 36.5   | 36.9   | 37.3 | 44           | 48   | 18                     | 20       | Do. ...        |  |
| "                  | 10                 | ...             | ...    | 36.6   | 36.8   | 37.0 | 44           | 50   | 22                     | 26       | Do. ...        |  |
| "                  | 11                 | ...             | ...    | 38.0   | 38.0   | 38.0 | 48           | 52   | 28                     | 32       | Do. ...        |  |
| "                  | 12                 | ...             | ...    | 37.3   | 37.8   | 38.2 | 40           | 46   | 28                     | 30       | Do. ...        |  |
| "                  | 13                 | ...             | ...    | 37.9   | 38.1   | 38.3 | 44           | 48   | 34                     | 36       | Do. ...        |  |
| "                  | 14                 | ...             | ...    | 39.2   | 39.1   | 38.6 | 54           | 62   | 30                     | 38       | Do. ...        |  |
| "                  | 15                 | ...             | ...    | 39.2   | 39.3   | 39.3 | 60           | 64   | 34                     | 40       | Few ...        | 15th.—The swelling has slightly decreased, and the tension and tenderness have disappeared.  |
| "                  | 16                 | ...             | ...    | 37.7   | 37.8   | 39.4 | 56           | 60   | 28                     | 36       | Do. ...        |  |
| "                  | 17                 | ...             | ...    | 38.0   | 41.3   | 40.1 | 58           | 66   | 36                     | 42       | Very Numerous. | 17th.—A marked change has taken place in the animal's condition. The animal appears dull. There is a general urticarial eruption and œdema of all four limbs.  |
| "                  | 18                 | ...             | ...    | 39.3   | 39.3   | 38.5 | 56           | 62   | 38                     | 40       | Absent.        | 18th.—The eruption has entirely disappeared.   |
| "                  | 19                 | ...             | ...    | 37.2   | 37.8   | 38.3 | 50           | 54   | 30                     | 36       | Do. ...        |  |
| "                  | 20                 | ...             | ...    | 38.4   | 38.4   | 38.6 | 48           | 52   | 28                     | 36       | Do. ...        |  |
| "                  | 21                 | ...             | ...    | 38.4   | 38.4   | 38.4 | 48           | 56   | 28                     | 34       | Numerous.      |  |
| "                  | 22                 | ...             | ...    | 40.8   | 40.6   | 40.2 | 60           | 64   | 20                     | 38       | Absent.        |  |
| "                  | 23                 | ...             | ...    | 39.8   | 39.6   | 39.6 | 64           | 64   | 32                     | 40       | Do. ...        |  |
| "                  | 24                 | ...             | ...    | 37.4   | 38.8   | 39.8 | 56           | 62   | 30                     | 42       | Do. ...        |  |
| "                  | 25                 | ...             | ...    | 37.7   | 38.3   | 38.6 | 50           | 56   | 28                     | 38       | Do. ...        |  |
| "                  | 26                 | ...             | ...    | 38.3   | 39.0   | 39.6 | 54           | 60   | 26                     | 34       | Do. ...        |  |
| "                  | 27                 | ...             | 1      | 40.1   | 39.8   | 39.8 | 62           | 64   | 30                     | 42       | Few ...        |  |
| "                  | 28                 | ...             | 2      | 38.8   | 38.7   | 38.5 | 56           | 56   | 28                     | 36       | Absent.        |  |
| "                  | 29                 | ...             | 3      | 39.0   | 38.8   | 38.5 | 66           | 68   | 34                     | 40       | Numerous.      |  |
| "                  | 30                 | ...             | 4      | 38.7   | 38.6   | 38.6 | 64           | 66   | 36                     | 40       | Do. ...        |  |
| "                  | 31                 | ...             | 5      | 38.2   | 38.6   | 38.9 | 66           | 70   | 32                     | 42       | Do. ...        |  |
| Feb.               | 1                  | ...             | 6      | 39.0   | 39.0   | 38.8 | 64           | 72   | 40                     | 46       | Very Numerous. | 1st.—Since the 17th ultimo, the general condition has been unchanged, but now the œdema of the limbs is diminishing.   |
| "                  | 2                  | ...             | 7      | 38.2   | 38.3   | 38.5 | 68           | 80   | 38                     | 46       | Swarming.      | 2nd— Do. do.   |
| "                  | 3                  | ...             | 8      | 38.5   | 38.5   | 37.8 | 70           | 86   | 42                     | 44       | Do.            | 3rd 8 A.M.—The animal is now very weak, and has difficulty in standing alone: the heart's action is tumultuous, 92 beats per minute. The breathing is quick and laboured, and the appetite for grain is gone. There is frequent passage of faeces (pultaceous). The weakness increased during the day, and death took place at 11.30 P. M. |



*Autopsy at 11.30 A.M.*

Body is fairly well nourished. There is oedema of all four limbs.

*Pleural cavities.*—Free from fluid; no pleuritic adhesions.

*Lungs.*—Pale, present several small elevated extravasations of blood beneath the visceral pleuræ. There is a localized emphysema at both apices, and at the free edge of the superior lobes.

*Heart.*—The *pericardial* sac contains a considerable amount of bright amber-coloured gelatinous material, between the pericardium and the walls of the chest. The visceral pericardium presents numerous extravasations, especially on the posterior aspect of the left ventricle. *On section*, the extravasation is found to occupy a position between the visceral pericardium and the muscular structure of the organ, varying in thickness from  $\frac{1}{20}$ th to  $\frac{1}{3}$ th of an inch. There is considerable hypertrophy of the heart as a whole. The *right ventricle* contains some small amount of dark-coloured clot, but the greater portion is occupied by decolourised clots of *ante mortem* origin. The wall of the right ventricle varies from  $\frac{1}{2}$  an inch to  $\frac{1}{4}$ th of an inch in thickness. The internal surface of the ventricle after washing with water still retains a red colour, which is due to *post mortem* staining. Scattered over the endocardial surface, especially over the *septum ventriculorum*, there are several circumscribed patches deep red in colour which, on section, are found to be caused by extravasated blood. These patches are raised above the general surface according to the amount of blood effused. *Valves*—Healthy. *Left ventricle*—The walls of this cavity are hypertrophied, considerably reducing its capacity, measuring  $2\frac{3}{8}$  inches at its greatest thickness. Decolourized clots, as in the right ventricle, are found to occupy the greater portion of its cavity, extending up the lumen of the great vessels. The walls are pale except at the seat of the extravasations. The latter are far more marked than those in the right ventricle; they are extensive, irregular in outline, and raised to a greater elevation than those previously noted; the largest are observed to involve the *musculi papillares*. *Valves.*—Healthy.

*Liver.*—Large. There are signs of old perihepatitis on its convex surface. Glisson's capsule presents a considerable number of round, circumscribed, opalescent patches, varying in size from  $\frac{1}{16}$ th to  $\frac{1}{8}$ th of an inch in diameter. There are also yellowish-coloured circular patches, very small in size, dotted sparsely over the whole surface of the organ. *On section*, these appear to occupy a purely superficial position. One round calcareous concretion only is to be observed on the under-surface of the left lobe.

*Stomach.*—Full of semi-digested food. No lesions.

*Small and Large Intestines.*—Healthy.

*Spleen.*—Very much enlarged, soft, and presents numerous petechiæ on its surface. *On section*, the tissues are soft and dark in colour.

*Kidneys.*—The capsules strip easily. The superficial surface of both organs presents very numerous round extravasations,  $\frac{1}{12}$ th inch in diameter, which, *on section*, are found to involve the cortical portion to the extent of from  $\frac{1}{8}$ th to  $\frac{1}{4}$ th of an inch.

This horse being a "roarer," the respiratory passages were carefully observed, and afterwards put by for future examination. Superior opening of larynx, to all appearance normal. It is only on very careful inspection that it can be observed that the arytenoids cartilages vary in size at all; the left presenting a slightly smaller contour than the right. On looking at the true vocal cords, the right appeared slightly the larger, and the free edge more opalescent than the left; the latter presented, at the junction of the posterior third with the anterior two-thirds, a somewhat extensive extravasation under its superficial covering. This is irregular in outline, and its pointed extremity faced the cricoid cartilage; the large bellied *crico-arytenoideus posticus* and *lateralis* are also found to be well developed on the right side; while on the left, the same muscles were almost completely atrophied.

*Remarks.*—This was an Australian horse, aged, but in good condition and health. It was inoculated with blood from the rat (*mus decumanus*) the blood of which contained very numerous hæmatozoa. Nothing of note occurred for 18 days, or until the 15th January, when hæmatozoa appeared in the blood, few in number. On the 17th, the hæmatozoa were very numerous, and the temperature rose to 41.3°C. On the 18th, the hæmatozoa were absent and the temperature fell to normal. On the 21st and 22nd the hæmatozoa were again numerous, and on the latter date the temperature rose to 40.8°C. From the 23rd to the 29th hæmatozoa were absent. From this date the hæmatozoa remained present, and were swarming two days before death. The temperature, however, did not, during this period, exhibit any corresponding rise.

The points of interest in this case are:—

- (i) Inoculation of the horse with the blood of the rat (*mus decumanus*) containing hæmatozoa produced Surra.
- (ii) The lengthened period, *viz.* 18 days, which elapsed between the inoculation of the animal and the first appearance of the hæmatooon in the blood.
- (iii) The presence of a general urticarial eruption over the body two days after the appearance of the hæmatooon in the blood.
- (iv) The comparatively short period which elapsed between the appearance of the hæmatooon and death.
- (v) The extensive pathological lesions found *post mortem* in the heart, spleen and kidneys.

RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Australian Gelding

Disease Rat: Surra

Age 15

Sex Gelding

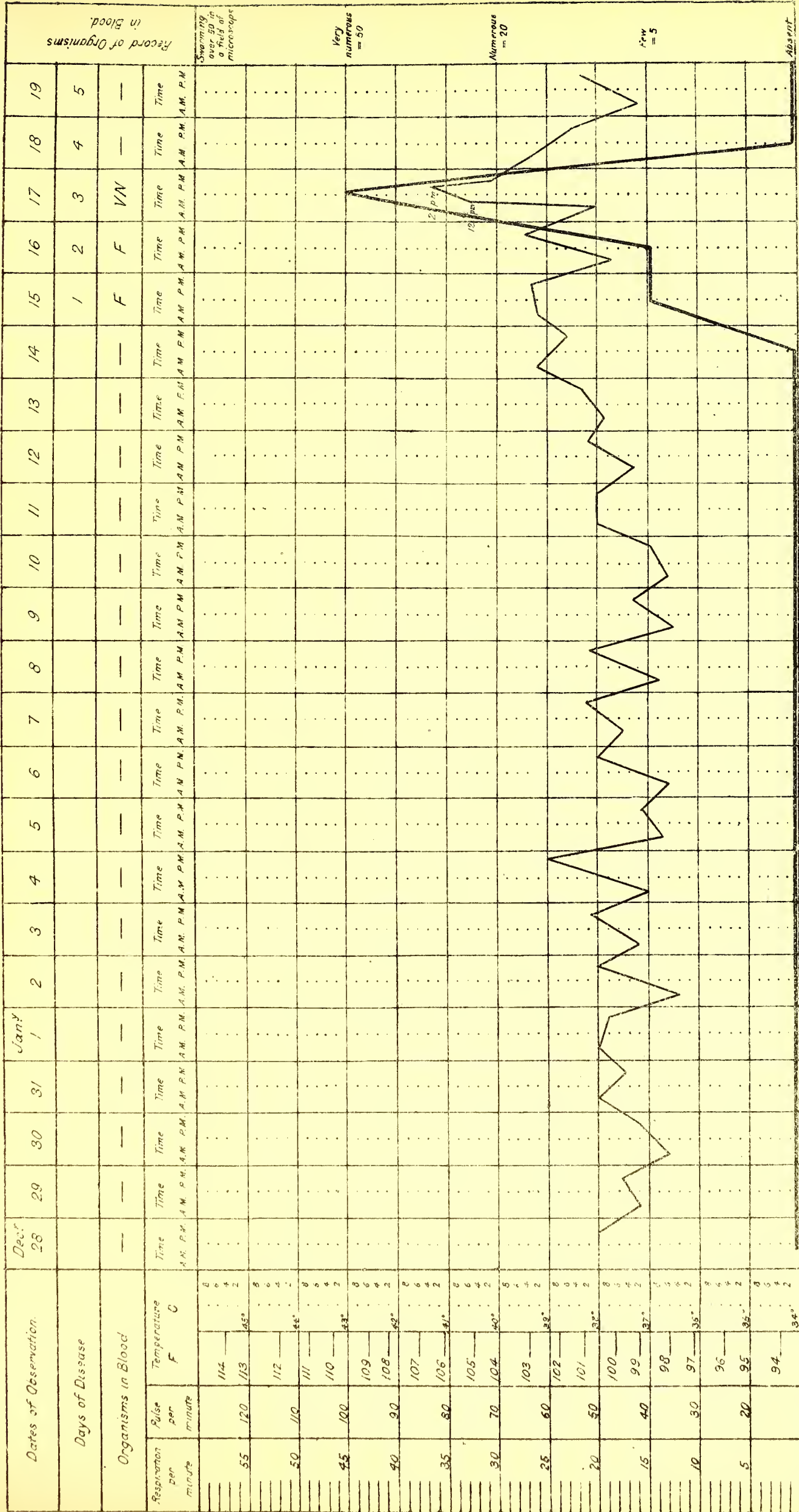
Colour Bay

Date of Inoculation 28.12.1891

Result Death

Date of Result 3.2.92

Register No. IX.



\* Inoculated Subcutaneously with 1.0 cc of blood containing *Haematobia* taken from the heart of a Rat (*Mus decumanus*) immediately after death.







## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

*Disease* \_\_\_\_\_ *Date of* \_\_\_\_\_ *Result* \_\_\_\_\_ *Age* \_\_\_\_\_ *Sex* \_\_\_\_\_ *Colour* \_\_\_\_\_  
*Register No.* IX

| Dates of Observation. |       | Temperature |     | Pulse      |            | Respiration |            | Days of Disease |           | Organisms in Blood. |      | Record of Organisms in Blood.             |      |
|-----------------------|-------|-------------|-----|------------|------------|-------------|------------|-----------------|-----------|---------------------|------|---|------|
| Jan'y                 | Feb'y | F           | C   | per minute | per minute | per minute  | per minute | Time            | Time      | Time                | Time | Time                                      | Time |
| 20                    | 31    | 114         | 46° | 120        | 55         | 114         | 46°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    | Swarming over 50 in a field of microscope |      |
| 6                     | 18    | 113         | 45° | 120        | 55         | 113         | 45°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 7                     | 19    | 112         | 45° | 120        | 55         | 112         | 45°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 8                     | 20    | 111         | 45° | 120        | 55         | 111         | 45°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 9                     | 21    | 110         | 43° | 120        | 55         | 110         | 43°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 10                    | 22    | 109         | 43° | 120        | 55         | 109         | 43°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 11                    | 23    | 108         | 42° | 120        | 55         | 108         | 42°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 12                    | 24    | 107         | 42° | 120        | 55         | 107         | 42°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 13                    | 25    | 106         | 41° | 120        | 55         | 106         | 41°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 14                    | 26    | 105         | 41° | 120        | 55         | 105         | 41°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 15                    | 27    | 104         | 40° | 120        | 55         | 104         | 40°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 16                    | 28    | 103         | 39° | 120        | 55         | 103         | 39°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 17                    | 29    | 102         | 38° | 120        | 55         | 102         | 38°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 18                    | 30    | 101         | 38° | 120        | 55         | 101         | 38°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 19                    | 31    | 100         | 37° | 120        | 55         | 100         | 37°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 20                    |       | 99          | 37° | 120        | 55         | 99          | 37°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 21                    |       | 98          | 36° | 120        | 55         | 98          | 36°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 22                    |       | 97          | 36° | 120        | 55         | 97          | 36°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 23                    |       | 96          | 35° | 120        | 55         | 96          | 35°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 24                    |       | 95          | 35° | 120        | 55         | 95          | 35°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |
| 25                    |       | 94          | 34° | 120        | 55         | 94          | 34°        | 4 M. P.M.       | 4 M. P.M. | N                   | N    |   |      |

(S 4/5)

Haematocrit curve  
Temperature .....

Drawn & Lithe Govt Photocopy. Office Pond 199







## Disease

## Result

Date of Result

1

Register No.

XXIX

Age

Sex

Colour

(S 415)

### Hypomethylen curve Temperature ..

Drawn & Litho. Govt. Photodupco: Office Pond 1893.





100

DATE

\*inoculated subcutaneously with 1.5cc of blood swarming with hematzoa taken from two Rats (*Mus decumanus*) immediately after death.



## HORSE No. XXVIII.

Chestnut, country-bred, aged, healthy and in good condition.

Subcutaneous inoculation with soiled rat's blood; swelling and œdema at seat of inoculation; appearance of hæmatozoon after latent period of 29 days; fluid in right tunica vaginalis testis; death on the 2nd day of disease; marked pathological lesions in heart, demonstrating virulence of the disease.

| Date.   | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Urine.  |         |               |        |
|---|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|---------|---------|---------------|--------|
|   |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | P.M.         | A.M. |                     | Colour. | Sp. Gr. | Re-action.    | Albn.  |
| 1891.   |                 |                 |        |        |        |      |              |      |                     |         |         |               |        |
| June  | 26...           | ...             | ...    | 37.7   | ...    | 40   | ...          | 28   | Healthy.            | Turbid. | 1,018   | Alkaline.     | Nil    |
| "   | 27...           | 35.7            | 36.4   | 36.6   | 36     | 38   | 32           | 26   | "                   | "       | 1,022   | "             | "      |
| "   | 28...           | 36.5            | 36.5   | 36.6   | 36     | 40   | 34           | 30   | "                   | "       | 1,030   | "             | "      |
| "   | 29...           | 36.1            | 36.8   | 37.0   | 38     | 42   | 24           | 28   | "                   | "       | 1,036   | "             | "      |
| "   | 30...           | 37.0            | 37.1   | 37.2   | 40     | 46   | 26           | 30   | "                   | "       | 1,020   | "             | "      |
| July  | 1...            | 36.8            | 37.1   | 37.3   | 36     | 38   | 20           | 26   | "                   | "       | 1,042   | "             | "      |
| "   | 2...            | 36.6            | 37.0   | 37.1   | 39     | 43   | 18           | 32   | "                   | "       | 1,034   | "             | "      |
| 3 P.M.—The animal was inoculated with 1.5 c.c. of blood, swarming with hæmatozoa, taken from the rat ( <i>Mus decumanus</i> ) immediately after death. 0.75 c.c. was injected subcutaneously over the right shoulder, and 0.75 c.c. beneath the skin on the right side of the face. |                 |                 |        |        |        |      |              |      |                     |         |         |               |        |
| "   | 3...            | 36.8            | 37.2   | 37.5   | 40     | 46   | 24           | 30   | Absent.             | "       | 1,026   | "             | "      |
| The parts surrounding the seats of inoculation are swollen and present considerable œdema.  |                 |                 |        |        |        |      |              |      |                     |         |         |               |        |
| "   | 4...            | 35.8            | 36.8   | 37.3   | 36     | 40   | 22           | 28   | "                   | "       | 1,028   | "             | "      |
| œdema unchanged; some blood-stained fluid trickled down right nostril but contained no hæmatozoa.   |                 |                 |        |        |        |      |              |      |                     |         |         |               |        |
| "   | 5...            | 36.2            | 36.3   | 36.4   | 38     | 42   | 24           | 26   | "                   | "       | 1,018   | "             | "      |
| Large ecchymoses involving the conjunctival membranes. Some swelling and œdema of the sheath; on pricking the sheath a nematode hæmatozoon was observed in the fluid on microscopical examination.  |                 |                 |        |        |        |      |              |      |                     |         |         |               |        |
| "   | 6...            | 36.2            | 36.4   | 36.4   | 38     | 44   | 20           | 28   | "                   | "       | 1,034   | "             | "      |
| There is some swelling of the right cheek, and slight paralysis of the right buccinator muscle.   |                 |                 |        |        |        |      |              |      |                     |         |         |               |        |
| "   | 7...            | 36.0            | 36.8   | 37.3   | 36     | 42   | 26           | 24   | "                   | "       | 1,042   | "             | "      |
| One nematode hæmatozoon was observed in the blood.  |                 |                 |        |        |        |      |              |      |                     |         |         |               |        |
| "   | 8...            | 36.7            | 36.8   | 36.8   | 34     | 40   | 24           | 28   | "                   | "       | 1,022   | "             | "      |
| One nematode hæmatozoon was observed in the blood.  |                 |                 |        |        |        |      |              |      |                     |         |         |               |        |
| "   | 9...            | 36.2            | 36.5   | 36.8   | 38     | 42   | 22           | 24   | "                   | "       | 1,040   | "             | "      |
| "   | 10...           | 36.2            | 36.8   | 37.3   | 36     | 44   | 30           | 28   | "                   | "       | 1,040   | "             | "      |
| "   | 11...           | 36.7            | 37.4   | 37.4   | 40     | 48   | 20           | 26   | "                   | "       | 1,036   | "             | "      |
| The swelling over right shoulder has disappeared, but the one on the cheek has increased in size, and now measures 3" x 1.5".   |                 |                 |        |        |        |      |              |      |                     |         |         |               |        |
| "   | 12...           | 37.0            | 38.2   | 38.4   | 42     | 50   | 24           | 30   | "                   | "       | 1,034   | "             | "      |
| "   | 13...           | 36.3            | 37.4   | 37.7   | 38     | 36   | 20           | 28   | "                   | "       | 1,020   | "             | "      |
| The swelling and œdema on the right cheek has increased, and there is fluid in the right tunica vaginalis.  |                 |                 |        |        |        |      |              |      |                     |         |         |               |        |
| "   | 14...           | 36.4            | 37.6   | 37.8   | 36     | 40   | 18           | 24   | "                   | "       | 1,040   | "             | "      |
| "   | 15...           | 36.7            | 37.8   | 38.0   | 42     | 48   | 22           | 29   | "                   | "       | 1,038   | "             | "      |
| "   | 16...           | 37.3            | 38.4   | 38.6   | 44     | 46   | 20           | 26   | "                   | "       | 1,032   | "             | "      |
| Swelling and œdema of face has now become reduced in size.  |                 |                 |        |        |        |      |              |      |                     |         |         |               |        |
| "   | 17...           | 37.4            | 37.3   | 38.1   | 44     | 50   | 24           | 30   | "                   | "       | 1,034   | "             | "      |
| "   | 18...           | 36.5            | 38.0   | 38.2   | 38     | 40   | 22           | 28   | "                   | "       | 1,026   | "             | "      |
| "   | 19...           | 37.2            | 37.6   | 37.8   | 38     | 42   | 20           | 26   | "                   | "       | 1,020   | "             | "      |
| "   | 20...           | 36.7            | 37.5   | 37.7   | 36     | 38   | 26           | 22   | "                   | "       | 1,032   | "             | "      |
| Animal is losing flesh; ecchymoses involving both conjunctivæ; the fluid has disappeared from the right tunica vaginalis.   |                 |                 |        |        |        |      |              |      |                     |         |         |               |        |
| "   | 21...           | 37.1            | 38.0   | 38.4   | 38     | 42   | 30           | 32   | "                   | "       | 1,036   | "             | "      |
| "   | 22...           | 37.7            | 38.0   | 38.0   | 38     | 44   | 24           | 30   | "                   | "       | 1,029   | "             | "      |
| "   | 23...           | 38.3            | 39.6   | 39.3   | 48     | 54   | 36           | 32   | "                   | "       | 1,032   | "             | "      |
| 6 A.M.—The animal was observed to shiver; this continued until 2 P.M. Temperature 39.6.   |                 |                 |        |        |        |      |              |      |                     |         |         |               |        |
| "   | 24...           | 37.7            | 38.0   | 38.0   | 44     | 50   | 28           | 28   | "                   | "       | 1,040   | "             | "      |
| "   | 25...           | 37.1            | 37.3   | 37.5   | 40     | 42   | 22           | 24   | "                   | "       | 1,034   | "             | "      |
| "   | 26...           | 37.2            | 38.0   | 38.2   | 38     | 44   | 26           | 30   | "                   | "       | 1,034   | "             | "      |
| "   | 27...           | 37.7            | 38.1   | 38.1   | 40     | 46   | 28           | 32   | "                   | "       | 1,028   | "             | "      |
| "   | 28...           | 36.8            | 37.5   | 37.7   | 36     | 40   | 20           | 28   | "                   | "       | 1,022   | "             | "      |
| "   | 29...           | 36.6            | 37.4   | 37.6   | 36     | 38   | 24           | 20   | "                   | "       | 1,040   | "             | "      |
| "   | 30...           | 36.4            | 37.8   | 38.2   | 36     | 40   | 18           | 26   | "                   | "       | 1,029   | "             | "      |
| "   | 31...           | 38.0            | 38.1   | 38.1   | 42     | 48   | 20           | 24   | Few.                | "       | 1,030   | "             | "      |
| The animal continues to lose flesh.   |                 |                 |        |        |        |      |              |      |                     |         |         |               |        |
| August  | 1...            | 38.7            | 38.0   | 37.7   | 58     | 66   | 22           | 28   | Very numerous.      | "       | 1,036   | Faintly acid. | "      |
| "   | 2...            | 37.0            | 37.8   | 38.1   | 60     | 72   | 18           | 24   | Very numerous.      | Clear.  | 1,036   | Acid.         | Trace. |
| The animal appears to have suddenly become much weaker, but is able to stand without assistance. Shortly after 6 P.M. the animal fell, and death took place at 8-30 P.M.  |                 |                 |        |        |        |      |              |      |                     |         |         |               |        |

Autopsy at 10 A.M., 3rd August 1891.

The animal is fairly well nourished.

*Thorax*.—There are no adhesions or fluid in the pleural cavities.

*Lungs*, Large.—There is localized emphysema at the apices and along the free edges of both organs; dotted about are large numbers of small ecchymoses, which are found to lie under the visceral pleuræ. On passing the hand over the surface of the organs, rounded eminences are felt from half an inch to one inch in diameter, somewhat hard to the touch. On section of the organ at a depth of half an inch from the surface, irregular-shaped, yellow-coloured calcareous masses are found, which are for the most part situated in the middle-third of the anterior lobes; but a few are scattered over the posterior lobes.

There is no fluid in the *pericardial cavity*.

*Heart*.—Weight 5 lbs. 13 ozs. The external surface of the heart is the seat of a considerable deposit of exudation light-yellow in colour, principally at and around the base, and running down the course of the coronary vessels. The muscular structure is dark in colour over a considerable portion of the organ, due to the numerous small extravasations of blood, which have become confluent. The *right auricle* and *ventricle* contain considerable masses of bright orange clots which are continuous with those in the large vessels; whilst externally the clots are bathed in dark coloured semi-fluid blood. Lying under the endocardium are large masses, dark in colour, almost black, which are due to sub-endocardial extravasations, and which on section do not appear to involve the tissues of the organ. The valves are healthy. The cavities on the *left* side of the heart present similar appearances to those described on the right, with this difference, that they are not quite so extensive in character; but the auriculo-ventricular valves present petechiæ of some size on their internal surfaces.

*Spleen*.—Weights 5 lbs. 10 ozs., is large and the tissues soft, the vessels on the surface of the capsule are injected. There are some small extravasations upon the capsule.

*Liver*.—Weights 10 lbs. 5 ozs.; is firm and of a healthy appearance, presenting several small calcareous nodules on the surface; but on section, none are seen invading the tissues.

*Stomach*.—On section, contains some semi-digested food. The *cuticular* portion is quite white and healthy; the *villous* portion presents a dirty-grey colour, and there are patches of a purplish hue lying midway between the pyloric extremity and the boundary-line. One patch has lost the superficial mucous membrane, and, whilst pale in the centre, is congested round the edge of the erosion.

*Kidneys*.—The *Right* weighs 1 lb 8 ozs., and the *Left* 1 lb. 4 ozs. The capsules strip easily, and each organ presents numerous circular patches, greenish in colour, dotted over the external cortical surface. These circular patches vary in size from that of a two-anna piece to half the size. On section.—The tissues appear pale, and the circular bodies are found to be crystals, which contain a small quantity of a semi-gelatinous material. These dip into the cortical portion forming small cavities.

*Small Intestines*.—The mucous membrane is dotted over the surface at considerable distances apart with aggregated patches of small round petechiæ, dark-red in colour.

*Large Intestines*.—Present a healthy appearance.

*Nasal fossæ*.—The Schneiderian membrane covering the turbiated bones is considerably thickened, and is dark-purple in colour, but there is no ulceration.

*Brain*.—The membranes are pale; but the superficial veins are deeply congested and the convolutions flattened. The lateral ventricles are distended with a clear fluid, which on microscopical examination is found to contain a few hæmatozoa.

The points of interest in this case are:—

(i) The blood of Rats (*Mus decumanus*), containing hæmatozoa, transmitted Surra to the horse, when it was inoculated subcutaneously.

(ii) A period of 29 days from the time of the inoculation elapsed before the hæmatozoon was found in the general circulation of the animal.

(iii) The period elapsing between the first appearance of the organism in the blood and death was only two days.

(iv) The extensive lesions found at the Autopsy.

(v) The presence of the hæmatozoon in the cerebro-spinal fluid.

#### HORSE No. XLII.

Subcutaneous inoculation with soiled rat's blood: Local symptoms at seat of inoculation; Appearance of hæmatozoon after latent period of 13 days; Death on the 2nd day of the disease; Marked pathological lesions present post mortem.

Chestnut, country-bred horse, aged, healthy, and in good condition.

| Date.         | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | URINE.  |         |                    |       |                |
|---------------|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|---------|---------|--------------------|-------|----------------|
|               |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | Colour. | Sp. Gr. | Re-action.         | Albn. | Hippuric Acid. |
| 1891.         |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |                |
| Septem. 14... | ...             | 38.2            | 38.2   | 38.2   | 36     | 36   | 18           | 13   | Healthy.            | ...     | ...     | ...                | ...   |                |
| „ 15...       | ...             | 35.3            | 36.2   | 36.7   | 36     | 40   | 20           | 16   | „                   | ...     | ...     | ...                | ...   |                |
| „ 16...       | ...             | 35.6            | 37.0   | 37.2   | 36     | 40   | 20           | 12   | „                   | ...     | ...     | ...                | ...   |                |
| „ 17...       | ...             | 36.5            | 36.6   | 37.0   | 44     | 36   | 20           | 16   | „                   | ...     | ...     | ...                | ...   |                |
| „ 18...       | ...             | 36.5            | 37.0   | 37.5   | 36     | 36   | 28           | 16   | „                   | ...     | ...     | ...                | ...   |                |
| „ 19...       | ...             | 36.4            | 37.7   | 36.7   | 40     | 36   | 16           | 16   | „                   | ...     | ...     | ...                | ...   |                |
| „ 20...       | ...             | 36.3            | 36.4   | 36.5   | 32     | 32   | 14           | 16   | „                   | Turbid. | 1.023   | Strongly Alkaline. | Nil   | Nil.           |
| „ 21...       | ...             | 36.4            | 37.2   | 37.6   | 44     | 36   | 16           | 14   | „                   | „       | 1.017   | „                  | „     |                |

4 P.M.—The animal was inoculated subcutaneously with 2.0 c.c. of blood containing numerous hæmatozoa taken from the rat (*Mus decumanus*) immediately after death, 1 c.c. of blood was injected over the right scapular region, and the other at the root of the neck on same side.



RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Country Bred Horse "Rat Surra"      Date of Inoculation, 21.9.91      Sex, Horse.      Age, Aged.      Colour, Chetnut.      Date of Result, 6.10.91      Register No. XLII.

| Dates of Observation.  |                  | Sept. 14    | 15  | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | Oct. 1 | 2    | 3    | 4    | 5    | 6    |
|------------------------|------------------|-------------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------|------|------|------|------|------|
| Days of Disease        |                  |             |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
| Organisms in Blood.    |                  |             |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
| Respiration per minute | Pulse per minute | Temperature |     | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time   | Time | Time | Time | Time | Time |
|                        |                  | F           | C   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
| 55                     | 120              | 114         | 45° | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
| 50                     | 110              | 112         | 44° | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
| 45                     | 100              | 111         | 43° | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
| 40                     | 90               | 109         | 42° | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
| 35                     | 80               | 107         | 41° | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
| 30                     | 70               | 106         | 40° | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
| 25                     | 60               | 105         | 39° | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
| 20                     | 50               | 104         | 38° | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
| 15                     | 40               | 103         | 37° | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
| 10                     | 30               | 102         | 36° | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
| 5                      | 20               | 101         | 35° | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  | 97          | 34° | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  | 95          |     | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  | 94          |     | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |
|                        |                  |             |     | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |

Hæmatocrit curve  
Temperature

Drawn & Litho Govt. Photodup. Office Poona 189

+Inoculated Subcutaneously with 2.0cc of blood containing numerous hæmatozoa taken from the heart of a Rat (*Mus decumanus*) immediately after death.





| Date.   | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | URINE.  |         |                    |       |                |
|---|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|---------|---------|--------------------|-------|----------------|
|   |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | Colour. | Sp. Gr. | Re-action.         | Albn. | Hippuric Acid. |
| 1891.   |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |                |
| Septem. 22...   | ...             | 35.7            | 36.4   | 37.5   | 40     | 36   | 16           | 14   | Absent.             | Turbid. | 1.013   | Strongly alkaline. | Nil   |                |
| There is some swelling at the two seats of inoculation.   |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |                |
| " 23...   | ...             | 36.7            | 37.0   | 37.3   | 36     | 36   | 14           | 16   | "                   | "       | 1.021   | "                  | "     |                |
| " 24...   | ...             | 36.1            | 36.7   | 37.6   | 40     | 36   | 20           | 16   | "                   | "       | 1.010   | "                  | "     |                |
| " 25...   | ...             | 37.4            | 37.0   | 37.2   | 40     | 40   | 16           | 16   | "                   | Clear.  | 1.002   | "                  | "     |                |
| " 26...   | ...             | 36.1            | 36.8   | 37.3   | 36     | 33   | 15           | 15   | "                   | "       | 1.002   | "                  | "     |                |
| " 27...   | ...             | 36.0            | 37.1   | 37.4   | 36     | 40   | 13           | 16   | "                   | Smoky.  | 1.010   | "                  | "     |                |
| " 28...   | ...             | 37.0            | 37.4   | 37.6   | 38     | 40   | 14           | 16   | "                   | Turbid. | 1.030   | "                  | "     |                |
| " 29...   | ...             | 36.4            | 37.3   | 37.8   | 38     | 38   | 16           | 16   | "                   | "       | 1.014   | "                  | "     |                |
| There are several ecchymoses on the conjunctival membranes of both eyes. The swellings at the seats of inoculation remain in the same condition as on the 22nd instant.   |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |                |
| " 30...   | ...             | 36.1            | 37.1   | 37.4   | 40     | 38   | 15           | 16   | "                   | "       | 1.044   | "                  | "     |                |
| There are several ecchymoses on the conjunctival membranes of both eyes. The swellings at the seats of inoculation remain in the same condition as on the 22nd instant.   |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |                |
| October 1...  | ...             | 36.4            | 37.0   | 37.0   | 36     | 38   | 16           | 18   | "                   | "       | 1.040   | "                  | "     |                |
| The swelling at the seat of inoculation at the root of the neck has increased in size, and now presents a raised tense tumour, circular in form, diam. 2". Swelling over scapular region is also larger. Conjunctival petechiæ fading, visible mucous membranes retain natural colour.            |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |                |
| " 2...  | ...             | 36.2            | 37.4   | 38.1   | 34     | 36   | 16           | 16   | "                   | "       | 1.010   | "                  | "     |                |
| Epithelial casts in urine.  |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |                |
| " 3...  | ...             | 37.5            | 37.5   | 37.5   | 34     | 36   | 14           | 16   | "                   | "       | 1.033   | "                  | "     |                |
| Tumour over right scapula is raised and tense, diam. 4". 5 P.M. above swelling is now surrounded by a zone of œdema, diam. 1.5", soft on manipulation, but not fluctuating.   |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |                |
| " 4...  | 1               | 39.0            | 40.0   | 39.6   | 56     | 64   | 24           | 32   | Few.                | "       | 1.010   | "                  | "     |                |
| Animal is dull and sleepy, and presents the usual symptoms of fever: the sclerotics are yellow, numerous petechiæ over membranæ nictitantes, nasal septum red and congested. The external zone of œdema has entirely disappeared, leaving only the raised hard circular tumour. Appetite failing. |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |                |
| " 5...  | 2               | 38.6            | 40.6   | 40.0   | 64     | 72   | 30           | 38   | Numerous.           | "       | 1.020   | "                  | "     |                |
| Animal appears brighter, and fairly strong. 5 P.M. animal weaker, and has some difficulty in standing.  |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |                |
| " 6...  | 3               | 37.6            | 38.7   | ...    | 42     | ...  | 38           | ...  | Swarming.           | "       | 1.032   | "                  | "     |                |
| 6 A.M.—Animal unable to rise. 8 A.M. rigidity of the muscles of the neck, fore and hind limbs. The fore limbs are extended, and remained in this condition until death at noon.   |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |                |
| Note.—There was no rise in temperature after death.   |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |                |
| Temperature 10 minutes after death, 38.3  |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |                |
| " 20 " 38.1   |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |                |
| " 35 " 37.8   |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |                |
| " 45 " 37.6   |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |                |

Large quantity of crystals,  $\text{caco}_3$ , in the form of striated spheres, large and small custard apple-shaped and numerous small crystals of phosphates of lime and magnesia.

#### Autopsy at 2-10 P.M.

Body fairly well nourished; there is a raised swelling at the seat of inoculation, about  $2\frac{1}{2}$ " in diameter. On re-flexion of the skin of the body, a small amount of yellow-coloured exudation is seen occupying the subcutaneous tissue.

*Thoracic Cavity.*—There is no fluid in the pleural cavities.

*Lungs.*—The apices of the lungs are the seat of a localized emphysema, and the surfaces of both organs present a dark colour owing to their congested condition; but there are no ecchymoses visible. On section, a considerable quantity of dark blood exudes from the cut surfaces; and on pressure, some air escapes.

The *pericardium* contains several ounces of an amber-coloured fluid.

*Heart.*—Weights 6 lbs. 2 ozs. The external surface of the heart presents several large patches of dark-coloured extravasations lying under the visceral pericardium, involving the coronary sulcus anteriorly; but posteriorly, the organ is free from petechiæ. The base of the heart is surrounded by a certain amount of yellow exudation, similar in appearance to that found in the subcutaneous tissue of the skin. On section, the *Right Auricle* and *Ventricle* are filled with semi-solid black clot; but in addition to the above, there is a large buff-coloured clot in the *Right Ventricle*, running up through the pulmonary valves into the pulmonary artery. On removal of the blood from these cavities, a few sub-endocardial extravasations are to be observed dotted over the internal surface of the *Right Auricle*, and there are numerous and extensive ones in the *Right Ventricle*. The *Left Auricle* and *Ventricle* contain some clots, but few and small in number, and the extravasations observed on the right side of the organ are absent on the left.

*Abdominal Cavity.*—Contains no fluid.

*Liver.*—Weights 8 lbs. 14 ozs. Small for the size of the animal, and presents some signs of old perihepatitis, but nothing recent. On section, the tissue appears healthy.

*Spleen.*—Weights 2 lbs. 6 ozs. Its surface is dotted over with numerous extravasations of blood, especially on its convex surface. On section, tissues firm and healthy in appearance.

*Stomach*.—Small and somewhat contracted. On section, the cuticular portion is tinged a light yellow, whilst the villous is somewhat pink, with patches here and there of a red colour.

*Kidneys*.—Both are imbedded in a mass of yellow exudation. The capsules strip easily, and the surface of the organs presents a pale brownish-grey colour, dotted over with small circular spots, dark-red in colour, and varying considerably in size. On section of the organs these patches are found to invade the cortical portion in large numbers.

The *Small Intestines* present externally a number of small, circular petechiæ lying under the peritoneal covering; but none are to be observed on section.

*Large Intestines*.—Healthy.

The chief points of interest are:—

- (i) The transmissibility of "Surra" from rat to horse by inoculation of soiled blood.
- (ii) The length of the incubation period being only 14 days, thus nearly approaching that presented by ordinary horse Surra.
- (iii) The great rapidity with which death occurred after the appearance of the hæmatozoon in the blood.
- (iv) The decrease in size and tension of the swelling at the seat of inoculation, which immediately preceded the appearance of the hæmatozoon in the blood.
- (v) The well marked pathological lesions in the heart.

#### HORSE No. LXII.

Brown, country-bred pony, aged, healthy, and in fair condition.

Subcutaneous inoculation with soiled rat's blood. Local symptoms at seat of inoculation. Appearance of a general urticarial eruption, and hæmatozoon after latent period of 63 days. Death on the 5th day of the disease. Double basic pneumonia.

| Date.  | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | REMARKS.  |
|--------|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|---|
|        |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |   |
| 1892.  |                 |                 |        |        |        |      |              |      |                     |   |
| May 11 | ...             | ...             | ...    | 38.1   | ...    | ...  | ...          | ...  | Healthy...          |   |
| " 12   | ...             | 36.8            | 37.4   | 38.3   | 36     | 36   | 30           | 30   | " ...               |   |
| " 13   | ...             | 36.4            | 37.4   | 38.1   | 36     | 36   | 30           | 29   | " ...               |   |
| " 14   | ...             | 37.4            | 38.0   | 39.0   | 44     | 40   | 32           | 28   | " ...               | 14th.—The animal was subcutaneously inoculated over the left shoulder with 2.0 c. c. of blood containing very numerous hæmatozoa, taken from the heart of a rat ( <i>Mus decumanus</i> ). |
| " 15   | ...             | 38.1            | 38.1   | 38.1   | 41     | 36   | 30           | 24   | Absent ...          | 15th.—There is a small raised tumour 1" in diameter at the seat of inoculation.   |
| " 16   | ...             | 38.3            | 38.1   | 38.3   | 36     | 40   | 28           | 36   | " ...               | 16th.—Tumour still further increased in size, and is somewhat tender on manipulation.   |
| " 17   | ...             | 38.1            | 38.7   | 38.1   | 36     | 42   | 26           | 32   | " ...               | 17th.— Do. do.  |
| " 18   | ...             | 38.1            | 38.5   | 38.5   | 36     | 40   | 24           | 30   | " ...               | 18th.—The tumour now measures 3.5" in diameter, and is tense and very tender to the touch.  |
| " 19   | ...             | 37.0            | 38.8   | 39.0   | 60     | 44   | 32           | 30   | " ...               | 19th.— Do. do.  |
| " 20   | ...             | 38.1            | 38.4   | 39.0   | 52     | 48   | 28           | 32   | " ...               |   |
| " 21   | ...             | 38.1            | 39.1   | 39.1   | 60     | 52   | 34           | 26   | " ...               |   |
| " 22   | ...             | 38.0            | 38.1   | 38.8   | 36     | 44   | 28           | 28   | " ...               |   |
| " 23   | ...             | 37.5            | 38.1   | 38.0   | 33     | 34   | 28           | 32   | " ...               |   |
| " 24   | ...             | 38.1            | 38.1   | 38.6   | 36     | 40   | 26           | 32   | " ...               | 24th.—The tumour at the seat of inoculation is reduced in size, and the tension and tenderness have almost disappeared. The sheath is swollen, and there is some œdema of the hind limbs. |
| " 25   | ...             | 38.1            | 38.1   | 38.1   | 33     | 28   | 33           | 28   | " ...               |   |
| " 26   | ...             | 38.1            | 38.1   | 38.1   | 40     | 44   | 28           | 32   | " ...               |   |
| " 27   | ...             | 38.1            | 38.1   | 38.1   | 36     | 44   | 24           | 28   | " ...               |   |
| " 28   | ...             | 38.0            | 38.1   | 38.1   | 36     | 44   | 29           | 28   | " ...               |   |
| " 29   | ...             | 38.1            | 38.8   | 38.3   | 40     | 46   | 32           | 30   | " ...               |   |
| " 30   | ...             | 39.0            | 38.1   | 38.1   | 44     | 44   | 24           | 32   | " ...               |   |
| " 31   | ...             | 38.1            | 38.1   | 38.1   | 40     | 40   | 24           | 28   | " ...               | 31st.—The swelling at seat of inoculation and the œdema of the limbs have disappeared.  |
| June 1 | ...             | 38.6            | 39.1   | 39.0   | 39     | 42   | 30           | 32   | " ...               |   |
| " 2    | ...             | 37.7            | 38.1   | 38.1   | 36     | 44   | 28           | 32   | " ...               |   |
| " 3    | ...             | 38.6            | 39.1   | 38.1   | 36     | 36   | 24           | 28   | " ...               |   |
| " 4    | ...             | 38.0            | 38.1   | 38.0   | 40     | 44   | 25           | 24   | " ...               |   |
| " 5    | ...             | 38.6            | 38.1   | 38.1   | 36     | 40   | 24           | 28   | " ...               |   |
| " 6    | ...             | 38.1            | 38.1   | 38.6   | 44     | 44   | 24           | 20   | " ...               |   |
| " 7    | ...             | 38.0            | 38.1   | 38.8   | 48     | 36   | 28           | 28   | " ...               |   |
| " 8    | ...             | 38.1            | 38.1   | 38.0   | 36     | 40   | 28           | 28   | " ...               |   |
| " 9    | ...             | 36.4            | 38.1   | 38.0   | 40     | 40   | 28           | 26   | " ...               |   |
| " 10   | ...             | 37.6            | 38.0   | 38.1   | 36     | 40   | 20           | 24   | " ...               |   |
| " 11   | ...             | 37.4            | 38.0   | 38.3   | 40     | 40   | 23           | 28   | " ...               |   |



| Date.   | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | REMARKS.       |
|---|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------------|
|   |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |                |
| 1892.   |                 |                 |        |        |        |      |              |      |                     |                |
| June 12   | ...             | ...             | 37.6   | 38.5   | 38.6   | 40   | 40           | 30   | 32                  | Absent.        |
| " 13  | ...             | ...             | 37.4   | 38.0   | 38.0   | 48   | 44           | 16   | 44                  | "              |
| " 14  | ...             | ...             | 36.8   | 38.0   | 38.6   | 44   | 44           | 20   | 28                  | "              |
| " 15  | ...             | ...             | 38.0   | 39.2   | 38.0   | 36   | 52           | 30   | 32                  | "              |
| " 16  | ...             | ...             | 37.4   | 37.6   | 38.0   | 44   | 48           | 27   | 36                  | "              |
| " 17  | ...             | ...             | 39.1   | 39.5   | 39.7   | 52   | 55           | 40   | 60                  | "              |
| " 18  | ...             | ...             | 37.6   | 39.3   | 39.4   | 44   | 48           | 32   | 34                  | "              |
| " 19  | ...             | ...             | 39.6   | 39.4   | 39.0   | 48   | 44           | 24   | 28                  | "              |
| " 20  | ...             | ...             | 37.4   | 39.0   | 38.8   | 36   | 40           | 20   | 24                  | "              |
| " 21  | ...             | ...             | 36.7   | 39.1   | 39.0   | 36   | 44           | 24   | 32                  | "              |
| " 22  | ...             | ...             | 38.0   | 38.5   | 38.3   | 40   | 48           | 33   | 24                  | "              |
| " 23  | ...             | ...             | 38.6   | 38.8   | 38.0   | 44   | 44           | 24   | 24                  | "              |
| " 24  | ...             | ...             | 39.0   | 39.3   | 38.1   | 40   | 44           | 32   | 28                  | "              |
| " 25  | ...             | ...             | 38.0   | 38.6   | 39.0   | 44   | 40           | 36   | 22                  | "              |
| " 26  | ...             | ...             | 38.0   | 38.7   | 38.3   | 42   | 44           | 24   | 28                  | "              |
| " 27  | ...             | ...             | 38.0   | 39.3   | 39.6   | 36   | 56           | 28   | 40                  | "              |
| " 28  | ...             | ...             | 38.0   | 38.6   | 39.0   | 36   | 56           | 28   | 28                  | "              |
| " 29  | ...             | ...             | 38.0   | 39.2   | 39.1   | 40   | 60           | 28   | 32                  | "              |
| " 30  | ...             | ...             | 38.0   | 39.1   | 39.3   | 33   | 40           | 24   | 32                  | "              |
| July 1  | ...             | ...             | 38.6   | 38.8   | 38.5   | 36   | 40           | 35   | 28                  | "              |
| " 2   | ...             | ...             | 38.3   | 38.6   | 39.1   | 40   | 44           | 24   | 32                  | "              |
| " 3   | ...             | ...             | 39.4   | 39.2   | 39.3   | 48   | 56           | 32   | 30                  | "              |
| " 4   | ...             | ...             | 37.6   | 38.7   | 38.5   | 36   | 48           | 33   | 24                  | "              |
| " 5   | ...             | ...             | 39.1   | 39.4   | 39.6   | 44   | 52           | 28   | 28                  | "              |
| " 6   | ...             | ...             | 37.6   | 39.6   | 38.6   | 36   | 40           | 28   | 24                  | "              |
| " 7   | ...             | ...             | 37.4   | 38.3   | 38.7   | 36   | 40           | 28   | 32                  | "              |
| " 8   | ...             | ...             | 38.0   | 38.5   | 38.5   | 36   | 44           | 24   | 28                  | "              |
| " 9   | ...             | ...             | 37.4   | 38.0   | 38.0   | 36   | 38           | 24   | 28                  | "              |
| " 10  | ...             | ...             | 37.6   | 37.4   | 37.4   | 36   | 44           | 20   | 24                  | "              |
| " 11  | ...             | ...             | 37.3   | 37.4   | 37.4   | 38   | 40           | 14   | 16                  | "              |
| " 12  | ...             | ...             | 37.0   | 37.6   | 37.4   | 34   | 44           | 16   | 20                  | "              |
| " 13  | ...             | ...             | 37.4   | 38.0   | 38.0   | 40   | 40           | 14   | 20                  | "              |
| " 14  | ...             | ...             | 37.4   | 39.0   | 39.2   | 40   | 44           | 15   | 24                  | "              |
| " 15  | ...             | ...             | 38.0   | 39.8   | 39.6   | 44   | 40           | 16   | 32                  | "              |
| " 16  | ...             | 1               | 39.3   | 40.6   | 40.0   | 60   | 70           | 18   | 40                  | Swarming.      |
| " 17  | ...             | 2               | 38.0   | 39.4   | 39.6   | 50   | 62           | 18   | 24                  | Very numerous. |
| " 18  | ...             | 3               | 39.1   | 39.3   | 39.4   | 46   | 56           | 21   | 28                  | Swarming.      |
| " 19  | ...             | 4               | 39.0   | 39.8   | 39.6   | 56   | 72           | 26   | 28                  | "              |
| 15th.—From the 1st of June the animal has apparently been quite free from disease.  |                 |                 |        |        |        |      |              |      |                     |                |
| 16th.—The animal appears dull and semi-somnolent; skin hot; the visible mucous membranes present a greyish-yellow tinge, and there are well marked conjunctival extravasations in both eyes. The nasal mucous membranes are slightly injected, and there are numerous petechiæ on the inner surface of the cheeks and lips. There is an eruption of urticaria, which first appeared on either side of the nose and head, and extended to the skin of the throat, neck, shoulders and fore-arms, thence over the chest, and abdomen to the thighs, both on the inner and external aspects. The legs are œdematous from the knees to the coronets; they feel hot, but are not painful on manipulation. The pulse is quick, and also feels full and hard under the finger. The individual heart-beats are strong, the second sound being increased in length. The appetite is normal. The slightly blood-stained mucus from the inner Canthi of the eyelids contains a few hæmatozoa. The urine is clear, Sp. Gr. 1.034, alkaline, no albumen. |                 |                 |        |        |        |      |              |      |                     |                |
| 17th.—The animal is brighter; the eruption has entirely disappeared and the appetite is normal. Urine, clear Sp. Gr. 1.030, strongly acid.  |                 |                 |        |        |        |      |              |      |                     |                |
| 18th.—(Edema of the limbs has increased, but the appetite remains unchanged. Urine smoky, Sp. Gr. 1.024, acid and contains numerous red-blood corpuscles.   |                 |                 |        |        |        |      |              |      |                     |                |
| 19th.—Animal is weak, but appetite remains unimpaired. There is some swelling and œdema of the abdomen. Urine smoky, Sp. Gr. 1.024, acid, contains numerous red-blood corpuscles but neither casts or crystals.   |                 |                 |        |        |        |      |              |      |                     |                |

| Date.   |     | Day<br>of<br>Disease. | Temperature C°. |        |        | Pulse. |      | Respira-<br>tion. |      | Hæmatozoa<br>in Blood. | REMARKS.   |
|---------|-----|-----------------------|-----------------|--------|--------|--------|------|-------------------|------|------------------------|--|
|         |     |                       | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.              | P.M. |                        |  |
| 1892.   |     |                       |                 |        |        |        |      |                   |      |                        |  |
| July 20 | ... | 5                     | 37.4            | 40.3   | 40.3   | 68     | 80   | 24                | 28   | Very nume-<br>rous.    | 20th.—The swelling and œdema of the abdomen and extremities have increas-<br>ed. Urine red, Sp. Gr. 1,030, strongly<br>acid, no casts.   |
| ,, 21   | ... | 6                     | 38.0            | 39.6   | 40.0   | 76     | 88   | 20                | 32   | Few ...                | 21st.—The animal is much weaker and<br>unable to stand. The pulse is frequent<br>and thready in character. The fæces<br>are coated with blood, and several clots<br>have been passed at intervals. Chloro-<br>form was administered at 5 P.M. Death<br>at 5.5 P.M. |

*Autopsy*, Immediately after death.

Body emaciated—considerable œdema of the abdomen and limbs.

*Chest*.—No fluid or adhesions in the pleural cavities.

*Right Lung*.—Superior surface is of a yellowish-pink colour, dotted over the surface with a number of black patches irregular in outline, varying in diameter from  $\frac{1}{4}$ rd to  $\frac{3}{4}$ th of an inch. There are also visible on the surface of the lung small elevations, in size from a pea to a small marble; these are covered by the lung-substance according to the depth at which situated. *On section*, the black patches are found to consist of coagulated blood, which dips into the lung-substance from  $\frac{1}{4}$ th to  $\frac{1}{2}$  an inch. The elevations are found to contain calcareous masses in their centres, surrounded by a zone of deep red-coloured thickened tissue. The right base presents a patch 6" x 8", over which the pleura is thickened and infiltrated with yellow coloured jelly, which is raised  $\frac{1}{4}$ th inch above the general level of the organ. This portion of lung is consolidated, and *on section* the tissue presents a red and yellow marbling, the individual lobules being clearly defined and separated by a layer of this jelly, the whole appearance exactly resembling the condition found in pleuro-pneumonia in the bovine species.

*Left Lung*.—The seat of hypostatic congestion. Well marked emphysema at the apex, and a peculiar marbling of the superior border, presenting an appearance as if the superficial lymphatic vessels were visibly distended with a yellowish green coloured fluid. *On section*, the appearance is found to be caused by the filling up of the septa between the lobules with jelly. Similar calcareous nodules to those in the right lung are present in this organ, and the base is affected as in the right lung for a distance of 8 or 9 inches.

The *pericardium* contains about two ounces of an orange-coloured fluid.

The *Heart* presents a dark red colour, with an orange-coloured exudation round the base; this material is dotted over with petechiæ varying in size from mere spots to extensive patches grouped together. They are present in considerable numbers, running down the sulcus with the anterior coronary vessels, and a few are visible accompanying the posterior. Heart weighs 5 lbs. 1 oz. *On section*, the endocardial lining of the right auricle, right ventricle and left auricle presents a yellowish tinge, but there are no petechiæ. The *Left Ventricle*.—The lining membrane and valves have a slight yellow tinge, and there are several small sub-endocardial extravasations about  $\frac{1}{4}$ " in diameter.

*Spleen*.—Weighs 2 lbs. 6½ ozs. This organ presents a peculiar lumpy appearance on both surfaces. These elevations are well marked and stand  $\frac{1}{4}$ th to  $\frac{1}{2}$ th of an inch above the general level of the rest of the organ. Some are situated in close proximity with others, but do not coalesce. They are circular in form and firm to the touch, but on section, nothing abnormal can be observed.

*Kidneys*.—Right weighs 1 lb. 5 ozs. Left 1 lb. 6 ozs. Capsules strip easily; no petechiæ on the surface of the organs. *On section*, they appear normal.

*Liver*.—Weighs 10 lbs. 6½ ozs. Old adhesions covering the convex surface of the organ; Glisson's capsule being somewhat opalescent. There are a few small calcareous nodules, dotted over the surface, and on section, these are found to invade the tissues of the organ.

*Stomach*.—Normal in appearance.

*Small Intestines*.—For several feet from the pyloric end of the stomach, the intestinal tissues present an œdematous condition. There are, however, no extravasations of blood, or parasites.

*Cæcum*.—Healthy.

*Colon*.—There are a few parasites adhering to the mucous membrane.

*Observations*.—In this case the animal was inoculated on the 14th of May with 2 c.c. of rat's blood containing very numerous hæmatozoa. On the 15th there was slight swelling at the seat of inoculation, which continued until the 24th, when it commenced to be absorbed and finally disappeared on the 31st. The animal continued in good health, the only change noticed being slight swelling of the sheath and hind limbs, which disappeared on exercise. On the 16th of July it was noticed that an urticarial eruption was present, and the symptoms of Surra were manifest. On examination of the blood, the hæmatoozon was found to be swarming, and the blood-stained mucus from the eyelids also contained a few. On the 17th there was not much change in the animal's condition except that the temperature was lower, and the frequency of the pulse and respirations less, and there were also fewer hæmatozoa in the blood. On the 18th the animal was worse, and the blood was again swarming with hæmatozoa. On the 19th and 20th the animal became weaker, but continued to feed well, although the œdema of the extremities and under-surface of the abdomen had increased. On the 21st the animal became too weak to stand, and chloroform was administered.

The points of interest in this case are—

(i) The extraordinary long period of 63 days intervening between the inoculation of the animal and the first appearance of the hæmatoozon in the blood. This points to the absolute necessity of continuing the examination of blood of animals inoculated, for a lengthened period, before giving an opinion as to the efficacy or otherwise of the inoculation; and also leads us to the conclusion that the hæmatoozon is capable of lying apparently dormant in the body for a considerable, and, at present, undetermined, period of time, then suddenly springing into existence in overwhelming numbers, and giving rise to most acute symptoms.

(ii) The acuteness of the attack, and the short period of only 6 days elapsing between the first appearance of the hæmatoozon in the blood and the death of the animal.



RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Inoculated subcutaneously with 2.0cc of blood containing very numerous haematobia taken from the heart of a Rat (*Mus decumanus*)      Age, Aged.      Sex, Gelding      Colour, Brown  
Disease "Rat Surra"      Date of Inoculation, 14.5.92.      Result, Death      Date of Result, 21.7.92.      Register No. LXII.

| Dates of Observation.  |                  | May 11        | 12            | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | June 1 | 2    |
|------------------------|------------------|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------|------|
| Days of Disease        |                  |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
| Organisms in Blood.    |                  |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
| Respiration per minute | Pulse per minute | Temperature F | Temperature C | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time   | Time |
|                        |                  | 114           | 45°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
| 55                     | 120              | 113           | 45°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
|                        |                  | 112           | 44°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
| 50                     | 110              | 111           | 44°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
|                        |                  | 110           | 43°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
| 45                     | 100              | 109           | 43°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
|                        |                  | 108           | 42°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
| 40                     | 90               | 107           | 42°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
|                        |                  | 106           | 41°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
| 35                     | 80               | 105           | 41°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
|                        |                  | 104           | 40°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
| 30                     | 70               | 103           | 39°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
|                        |                  | 102           | 38°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
| 25                     | 60               | 101           | 37°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
|                        |                  | 100           | 36°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
| 20                     | 50               | 99            | 35°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
|                        |                  | 98            | 34°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
| 15                     | 40               | 97            | 33°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
|                        |                  | 96            | 32°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
| 10                     | 30               | 95            | 31°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |
|                        |                  | 94            | 30°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |      |

(S 415)

Haematobion curve .....  
Temperature .....  
Pulse .....  
Respiration .....

Drawn & Litho Govt. Photodupco Office Poona 1933





## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Colour

Sex

Age.

LXII.

Register No.

Date of Result:

### Result.

Date of

Disease.

| Dates of Observation. |  | Days of Disease |  |     |  |     |  |     |  |        |  |      |  |        |  | June 3 |  | June 4 |  | June 5 |  | June 6 |  | June 7 |  | June 8 |  | June 9 |  | June 10 |  | June 11 |  | June 12 |  | June 13 |  | June 14 |  | June 15 |  | June 16 |  | June 17 |  | June 18 |  | June 19 |  | June 20 |  | June 21 |  | June 22 |  | June 23 |  | June 24 |  | June 25 |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |   |  |
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| Organisms in Blood.   |  | Temperature     |  |     |  |     |  |     |  |        |  |      |  |        |  |        |  |        |  |        |  |        |  |        |  |        |  |        |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |   |  |
|                       |  | F               |  |     |  |     |  |     |  |        |  |      |  |        |  |        |  |        |  |        |  |        |  |        |  |        |  |        |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |   |  |
|                       |  | C               |  |     |  |     |  |     |  |        |  |      |  |        |  |        |  |        |  |        |  |        |  |        |  |        |  |        |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |   |  |
|                       |  | Pulse           |  |     |  |     |  |     |  |        |  |      |  |        |  |        |  |        |  |        |  |        |  |        |  |        |  |        |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |   |  |
|                       |  | per             |  |     |  |     |  |     |  |        |  |      |  |        |  |        |  |        |  |        |  |        |  |        |  |        |  |        |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |   |  |
|                       |  | minute          |  |     |  |     |  |     |  |        |  |      |  |        |  |        |  |        |  |        |  |        |  |        |  |        |  |        |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |         |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |      |  |        |  |   |  |
|                       |  | 55              |  | 120 |  | 114 |  | 43° |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M.   |  | 4 A.M. |  | P.M.   |  | 4 A.M. |  | P.M.   |  | 4 A.M. |  | P.M.   |  | 4 A.M.  |  | P.M.    |  | 4 A.M.  |  | P.M.    |  | 4 A.M.  |  | P.M.    |  | 4 A.M.  |  | P.M.    |  | 4 A.M.  |  | P.M.    |  | 4 A.M.  |  | P.M.    |  | 4 A.M.  |  | P.M.    |  | 4 A.M.  |  | P.M.    |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P.M. |  | 4 A.M. |  | P |  |

Pulse.....

Respiration.....

Drawn & Litho. Govt. Photoduplino: Office Poona 1893

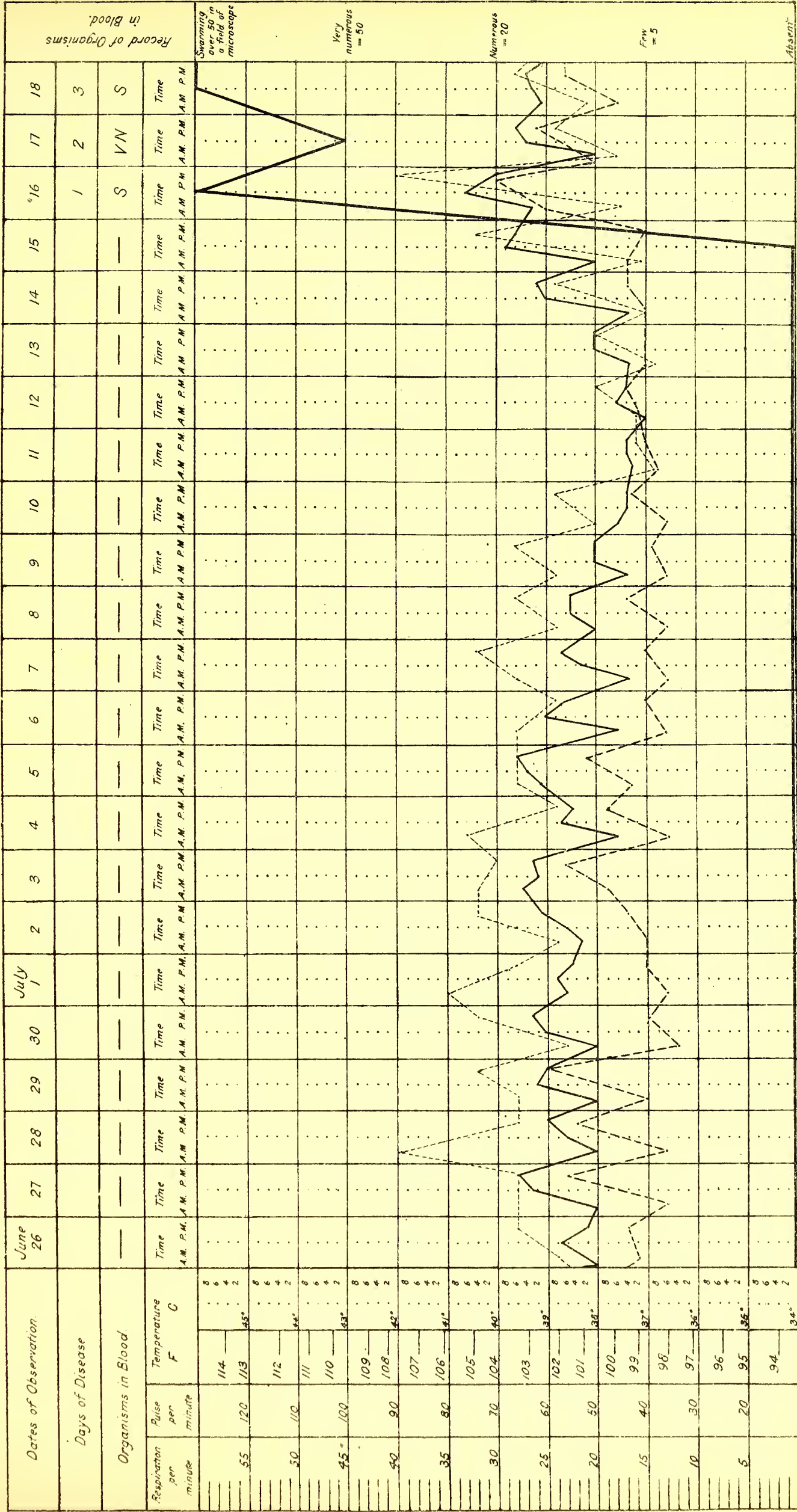
Haematocrit curve  
Temperature . . . .





RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Disease \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_ Colour \_\_\_\_\_  
Date of \_\_\_\_\_ Result \_\_\_\_\_ Date of Result \_\_\_\_\_ Register No. LXII.



Hamatocrit curve  
Temperature  
Pulse  
Respiration  
Drawn by L. H. Gov. Photomicro: Office Pease 1893  
(5 415)



*Colour*  
*Register No. LXII.*

Colour

(S. 415)

11

Pulse \_\_\_\_\_  
Temperature \_\_\_\_\_





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B.  
RAT SURRA

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APPENDIX II.

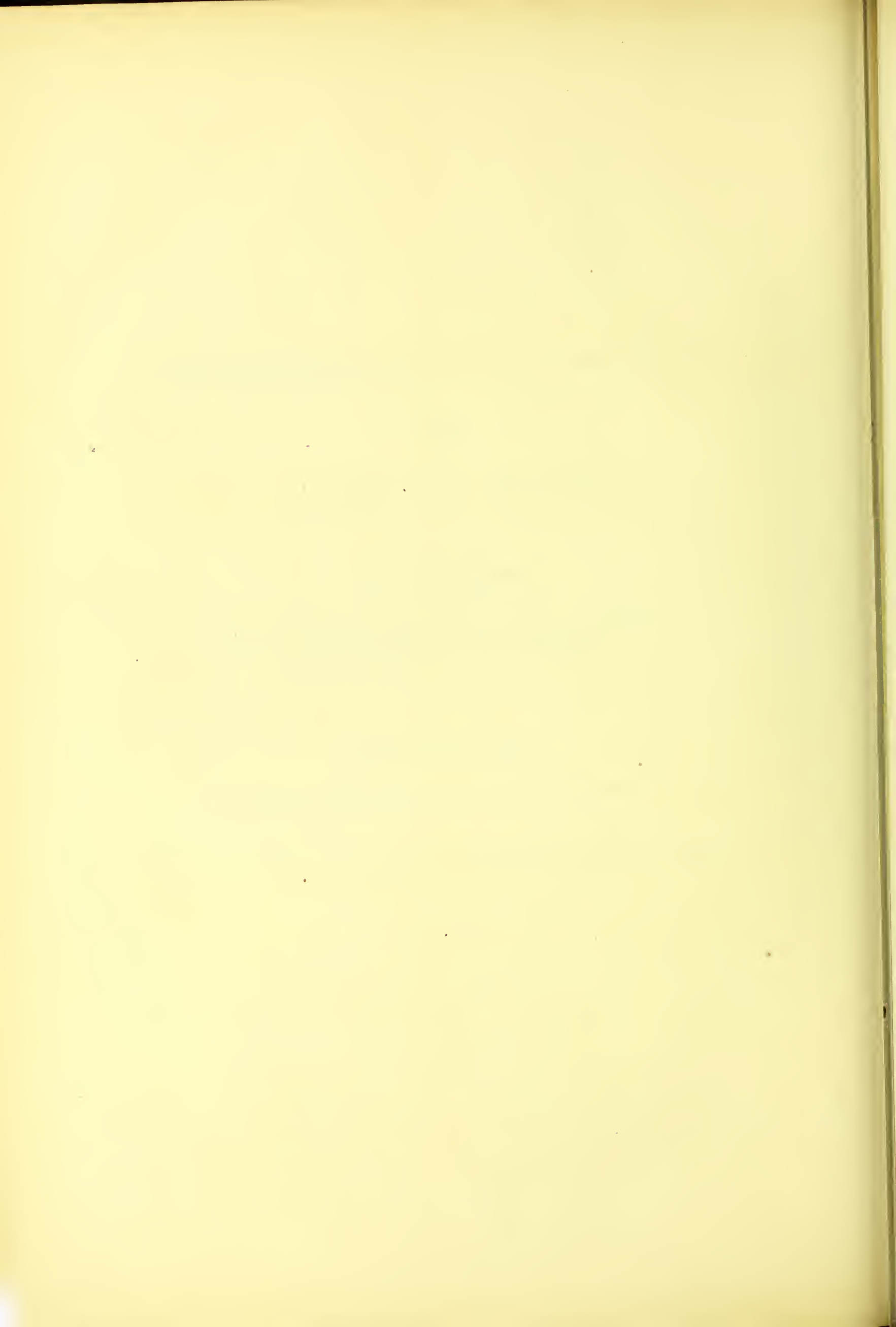
SUBCUTANEOUS INOCULATION WITH BLOOD  
DERIVED FROM POSITIVE CASES.

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RESULTS POSITIVE.

HORSES Nos. XXXV, XXXVI, XLV, LXVII, XXXVII.

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Age, aged \_\_\_\_\_ Sex, gelding \_\_\_\_\_ Colour, light Chestnut

Result, Death \_\_\_\_\_ Date of Result, 10. 8. 91 \_\_\_\_\_ Register No. XXXV \_\_\_\_\_

Register No. XXIV

Colour. Light Chestnut

Age, aged \_\_\_\_\_ Sex, gelding \_\_\_\_\_ Colour, light Chestnut

Result, *Death* Date of Result, *10. 8. 91* Register No. *XXXX*

Register No. XXIV

Colour. Light Chestnut

| Record of Organisms in Blood              |   |
|---|---|
| Swarming over 50 in a field of microscope | 2 |
| Very numerous                             | 3 |
| Numerous                                  | 4 |
| Few                                       | 5 |
| Absent                                    | 6 |



## HORSE No. XXXV.

Subcutaneous inoculation with soiled blood of rat previously passed through *one* horse. Maximum swelling at seat of inoculation on the 5th day. Appearance of the hæmatozoon after a latent period of 6 days, or 23 days less than in the case of the direct rat inoculation. Death on the 2nd day of the disease.

Chestnut Country-Bred, aged, but apparently healthy and in fair condition.

| Date.       | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | REMARKS.   |
|-------------|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|--|
|             |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |  |
| 1891.       |                 |                 |        |        |        |      |              |      |                     |  |
| July 26...  | ...             | 38·6            | 38·6   | 38·7   | 30     | 33   | 12           | 14   | Healthy             |  |
| " 27...     | ...             | 37·2            | 37·8   | 38·0   | 32     | 36   | 11           | 14   | "                   |  |
| " 28...     | ...             | 36·7            | 37·2   | 37·5   | 32     | 34   | 11           | 13   | "                   |  |
| " 29...     | ...             | 37·4            | 37·4   | 37·6   | 30     | 33   | 10           | 11   | "                   |  |
| " 30...     | ...             | 37·3            | 37·3   | 37·2   | 28     | 32   | 11           | 13   | "                   |  |
| " 31...     | ...             | 37·0            | 37·0   | 37·3   | 31     | 34   | 11           | 13   | "                   |  |
| August 1... | ...             | 36·8            | 37·2   | 37·2   | 33     | 33   | 10           | 11   | "                   |  |
| " 2...      | ...             | 36·7            | 37·4   | 37·6   | 31     | 33   | 12           | 13   | "                   | 2nd, Noon.—The animal was subcutaneously inoculated over the left shoulder with 0·5 c. c. of blood containing very numerous hæmatozoa, taken from the internal jugular vein of Horse No. XXVIII. |
| " 3...      | ...             | 37·5            | 37·5   | 37·5   | 30     | 30   | 12           | 14   | Absent              | 3rd.—Considerable swelling and œdema at the seat of inoculation.   |
| " 4...      | ...             | 37·4            | 37·4   | 37·4   | 34     | 36   | 10           | 13   | "                   | 4th.—The swelling at seat of inoculation has increased, and is tense and tender on manipulation.   |
| " 5...      | ...             | 37·2            | 37·3   | 37·3   | 32     | 33   | 12           | 13   | "                   | 5th.—Do. do.   |
| " 6...      | ...             | 37·3            | 37·5   | 37·6   | 29     | 32   | 11           | 11   | "                   | 6th.—The swelling and œdema at seat of inoculation has further increased, and is now very tense and tender, the animal resenting manipulation.   |
| " 7...      | ...             | 37·1            | 37·6   | 37·8   | 36     | 36   | 12           | 14   | "                   | 7th.—Do. do.   |
| " 8...      | 1               | 38·4            | 38·2   | 37·8   | 44     | 56   | 16           | 20   | Numerous.           | 8th.—A few petechiæ are now present on the conjunctival mucous membranes, and the swelling and œdema have diminished in extent.  |
| " 9...      | 2               | 37·4            | 37·4   | 37·4   | 48     | 66   | 18           | 24   | Very numerous.      | 9th.—Swelling and œdema still further reduced in size.   |
| " 10...     | ...             | ...             | ...    | ...    | ...    | ...  | ...          | ...  | ...                 | 10th.—The animal became weaker during last evening, and death occurred at 4 A.M.   |

Autopsy at 10 A.M.

The body is fairly nourished.

*Thorax*.—No fluid in the thoracic cavity or adhesions of the pleuræ.

*Right Lung*.—The apex is consolidated, and on section, each individual lobule is seen to be mapped out by a narrow layer of a brownish yellow-coloured jelly which nowhere exceeds  $\frac{1}{12}$ th of an inch in width. The pleura is thickened and opaque in patches over the middle third of the superior surface. The surface of the lung is dark in colour, for the most part caused by large numbers of extravasations of blood, varying in size from  $\frac{1}{16}$ th to  $\frac{3}{4}$ th inch in diameter, circular or irregular in outline, and slightly darker in the centre of the patch than at the circumference. On passing the hand over the surface of the organ, hard circumscribed lumps are felt, varying in size from a pea to a small walnut. There are also several small ones lying on or very near to the surface of the organ; whilst others can be felt in the substance of the tissues. On section, the centres of these bodies are found to be occupied by caseous material, yellow in colour; and externally, there are zones of inflammatory material, which in time would have encapsuled them.

*Left Lung*.—There are superficial extravasations and nodules, exactly the same as those observed in the Right Lung. The anterior portion of the organ is consolidated for a distance of 8", running back from the apex. On section, this portion presents a layer of the brownish yellow jelly, lying between and completely surrounding the individual lobules. In this situation the exudation is quite  $\frac{1}{8}$ th of an inch in thickness in isolated patches.

There is a little fluid in the *pericardium*.

*Heart*.—Weight 4 lbs. 15½ ozs. Externally the base is surrounded by a certain amount of a gelatinous material. There are extensive extravasations of blood lying beneath the visceral pericardium on the right auricle and ventricle, and others as extensive in the auriculo-ventricular groove accompanying the coronary vessels. There are a few smaller ones dotted over the surface of the left ventricle.

The *Right Auricle* is distended with an orange coloured clot, and there are a few sub-endocardial ecchymoses.

*Right Ventricle* contains a large clot externally dark-red, but its centre is of a bright orange colour. There are numerous and extensive sub-endocardial extravasations, very dark in colour. The larger ones lie longitudinally from the base to the apex of the organ. Two are  $1\frac{1}{2}$ " in length by  $\frac{1}{2}$ " in width, and on transverse section present a semi-circular form. There are a few small circular-shaped subendocardial ecchymoses on the flaps of the tricuspid valve.

The *Left Auricle* contains a dark clot, and there are a few subendocardial ecchymoses.

The *Left Ventricle* presents a similar condition to that described as found in the *Right*, with this exception that the extravasations are rather smaller; and consequently there is more healthy tissue showing between the dark coloured patches.



*Liver*.—Weight 11 lbs. 4 ozs. Dark in colour; surface smooth and healthy, with the exception of a few scattered circular bodies, dark-brown in colour, which *on section* are found to pervade the tissue of the organ.

*Spleen*.—Weight 2 lbs. 2 ozs. Normal in size. The surface presents numerous dark-red coloured but small extravasations dotted about, mostly on the convex surface. *On section*, the tissues are firm and appear healthy.

*Kidneys*.—The Right one weighs 1 lb. 3 ozs. and the Left one, 1 lb. 3½ ozs. The tissues are of a pale greenish-grey colour, but firm. The Stellate veins are injected at the base of the organs, but there are no petechiæ visible. *On section*, the cortical portion presents very well marked congestion of the blood vessels.

*Stomach*.—*Externally* there is nothing noticeable. *On section*, the organ contains some semi-digested food. The cuticular portion is healthy; but the villous portion, midway between the line of demarcation and the pyloric extremity, presents a raised lump above the general elevation of the surrounding coat, one inch in length and ¼th of an inch in breadth.

*Small Intestines*.—There are several patches of petechiæ aggregated together, lying on the mucous membrane, along the course of the small intestines. There is no ulceration.

*Large Intestines*.—The cæcum and colon are full of fæces, but there are no petechiæ or ulcers.

*Remarks*.—This animal was inoculated subcutaneously with 0·5 c. c. of blood containing very numerous hæmatozoa, taken from Horse No. XXVIII, which latter had been injected with blood directly from the Rat (*Mus decumanus*). The period which elapsed between the inoculation of the rat's blood and the appearance of the organism in the circulation of Horse No. XXVIII was 29 days. In the present experiment, however, the period of incubation fell to 6 days, only a fifth of the time occupied previously. This points to the fact that directly the organism of rat origin has become acclimatized to its new surroundings in the horse, it is capable, on re-inoculation, of reproducing the disease in a fraction of the time previously occupied.

#### HORSE No. XXXVI.

Dark Chestnut country-bred horse, aged, apparently healthy, and in fair condition.

Subcutaneous inoculation with soiled blood of rat, previously passed through *one* horse. Maximum local manifestations at seat of inoculation on the 5th day. Appearance of the hæmatozoon after a latent period of 5 days, or 24 days less than in the case of the direct rat inoculation. Death on the 4th day of the disease.

| Date.    | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | REMARKS.                                   |
|----------|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|--|
|          |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |  |
| 1891.    |                 |                 |        |        |        |      |              |      |                     |  |
| July 29  | ...             | 35.5            | 36.0   | 36.1   | 30     | 36   | 14           | 12   | Healthy ...         |  |
| " 30     | ...             | 35.6            | 36.0   | 36.2   | 32     | 36   | 12           | 16   | " ...               |  |
| " 31     | ...             | 35.5            | 36.1   | 36.3   | 28     | 30   | 12           | 10   | " ...               | 2nd, 11 A.M.—The animal was inoculated     |
| August 1 | ...             | 35.7            | 36.2   | 36.4   | 27     | 32   | 10           | 14   | " ...               | subcutaneously over the left shoulder      |
| " 2      | ...             | 35.8            | 36.8   | 37.2   | 28     | 30   | 10           | 16   | " ...               | with .5 c.c. of blood, containing very     |
|          |                 |                 |        |        |        |      |              |      |                     | numerous hæmatozoa, taken from the         |
|          |                 |                 |        |        |        |      |              |      |                     | jugular vein of Horse No. XXVIII,          |
|          |                 |                 |        |        |        |      |              |      |                     | which had been previously inoculated       |
|          |                 |                 |        |        |        |      |              |      |                     | from the rat.                              |
| " 3      | ...             | 36.4            | 36.6   | 36.7   | 30     | 36   | 12           | 14   | Absent ...          | 3rd.—There is a small circular swelling 1" |
|          |                 |                 |        |        |        |      |              |      |                     | in diameter at the seat of inoculation,    |
|          |                 |                 |        |        |        |      |              |      |                     | which is surrounded by a narrow zone       |
|          |                 |                 |        |        |        |      |              |      |                     | of œdema.                                  |
| " 4      | ...             | 36.5            | 36.4   | 36.4   | 34     | 36   | 12           | 16   | " ..                | 4th.—Swelling and œdema increased          |
|          |                 |                 |        |        |        |      |              |      |                     | in extent, and tender on manipulation.     |
| " 5      | ...             | 36.0            | 36.3   | 36.4   | 34     | 38   | 14           | 14   | " ..                | 5th.—Swelling and œdema now measures       |
|          |                 |                 |        |        |        |      |              |      |                     | 2.25" × 1.5".                              |
| " 6      | ...             | 36.5            | 36.5   | 36.5   | 40     | 47   | 14           | 16   | " ...               | 6th.—The swelling and œdema have still     |
|          |                 |                 |        |        |        |      |              |      |                     | further increased, and the tumour is       |
|          |                 |                 |        |        |        |      |              |      |                     | tense and tender on manipulation.          |
| " 7      | 1               | 36.2            | 36.3   | 36.4   | 48     | 56   | 12           | 16   | Few ...             | 7th.—The swelling and œdema have some-     |
|          |                 |                 |        |        |        |      |              |      |                     | what subsided, and as a consequence the    |
|          |                 |                 |        |        |        |      |              |      |                     | hæmatozoon should have appeared in         |
|          |                 |                 |        |        |        |      |              |      |                     | the blood.                                 |
| " 8      | 2               | 36.8            | 37.5   | 37.7   | 50     | 60   | 12           | 18   | Very nume-          | 8th.—Swelling much reduced in size, and    |
|          |                 |                 |        |        |        |      |              |      | rous.               | now feels quite boggy.                     |
| " 9      | 3               | 37.4            | 37.8   | 38.0   | 54     | 60   | 14           | 18   | Swarming.           | 9th. Do. do.                               |
| " 10     | 4               | 37.6            | 36.2   | 35.8   | 52     | 58   | 12           | 14   | Very nume-          | 10th.—The animal became very weak du-      |
|          |                 |                 |        |        |        |      |              |      | erous.              | ring the day, and succumbed at 6.15 P.M.   |

*Autopsy* at 8 A.M., 11th August 1891.

*Thorax*.—There is no fluid in the pleural cavities or adhesions of the pleuræ.

*Lungs*.—Present some few small irregular patches of extravasated blood, lying under the visceral pleuræ about the size of a two-anna piece. *On section*, both apices present a thin layer of yellow jelly lying between the individual lobules, but this is entirely limited to the apices, and for a distance of about 6" posteriorly the tissue of the lobules presenting a semi-solid condition, dark-red in colour. The remaining portion of both organs present on section a healthy appearance.

There is no fluid in the pericardial sac.

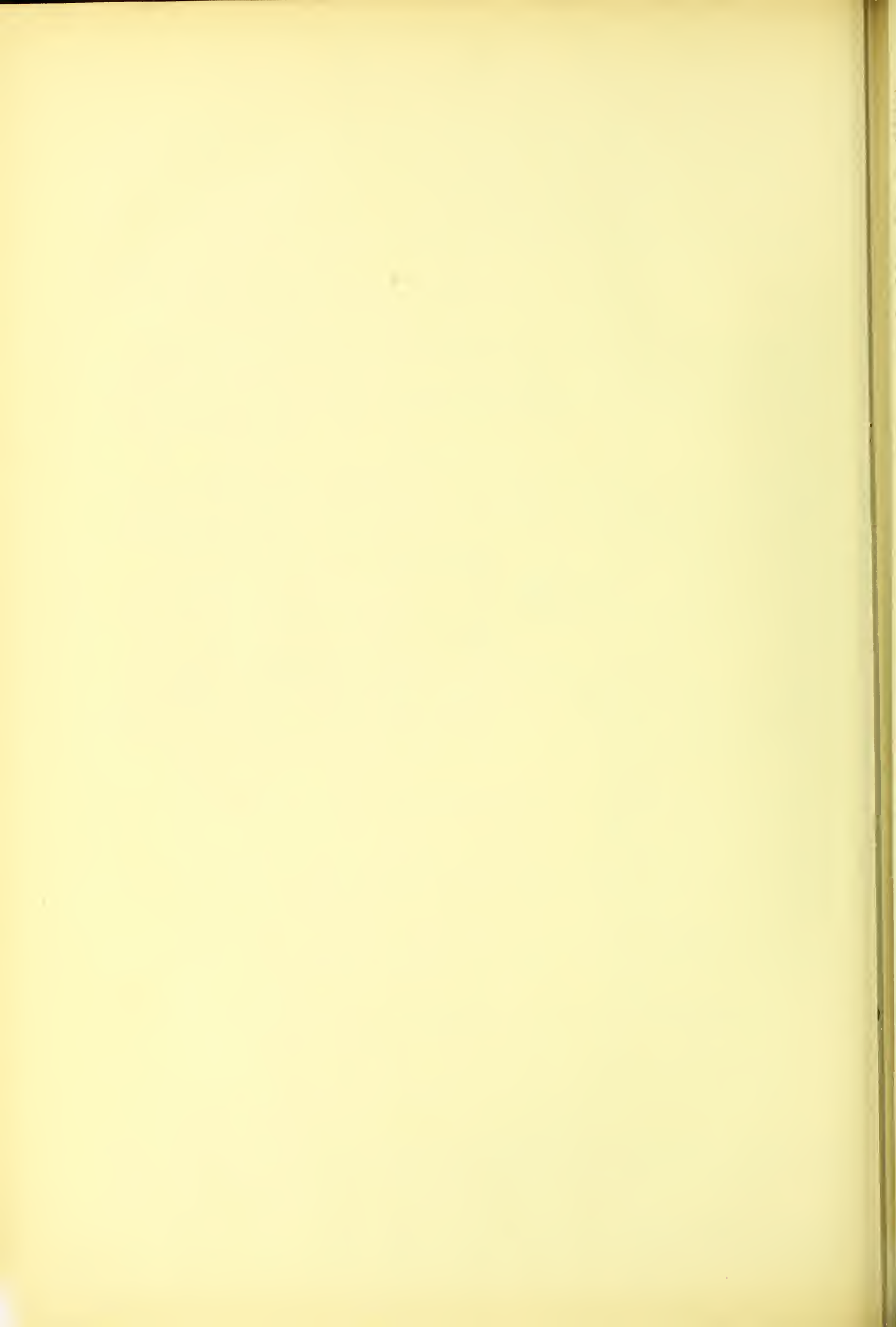
*Heart*.—Weights 5 lbs. 2 ozs., and *externally* presents numerous and extensive extravasations under the visceral pericardium, more especially posteriorly, lying on either side of the course of the coronary vessels. There are a few small extravasations situated near the apex of the ventricles. *Internally, on section*, the right side of the heart is distended with dark-coloured semi-solid clots, and there are a few sub-endocardial extravasations in the *right auricle*. Valves healthy.



(S. 415)

Pulse. . . . .  
Respiration. . . . .

2. Inoculated Subcutaneously with 0.5 cc of blood containing very numerous hematoczoa taken from Jugular Vein of Horse No. XXVIII.





The *left auricle* contains a small amount of semi-fluid blood, and the lining membrane is blood-stained. The *left ventricle* contains some dark semi-fluid blood, but little or no deecolourized elots. There are a few sub-endocardial extravasations about the size of a two-anna piece, involving for the most part the raised portions of the *museuli papillares*. Valves healthy.

*Liver*.—Weighs 2 lbs. 10 ozs., and is fairly firm to the touch. There are numerous small extravasations on the external surface of the capsule.

*Kidneys*.—*Right* weighs 1 lb. 1 oz., *Left* 1 lb. 2 ozs. The organs are of a somewhat pale greenish-grey colour. The stellate veins are injected, but there are no peteehiæ. *On section*, the cortical portion presents a dotted red appearance which appears to be due to congestion of the Malpighian corpuseles.

*Stomach*.—*Externally* the organ presents a normal appearance. *On section* there is a little semi-digested food in its cavity. Both *cuticular* and *villous* portions present a normal appearance, with this exception that there are two small raised eminences lying on the top of the rugæ, near the line of demareation, with crypt-like depressions on their summits.

*Small Intestines*.—The walls of the *duodenum* and a few feet of the *jejunum* are somewhat œdematous. There are a few small extravasations aggregated together, but there are no signs of ulceration or parasites.

*Large Intestines*.—Are distended with semi-digested food. There are several irregular shaped patches, red in colour, on the wall of the *cæcum* near its outlet into the *colon*, which present a deeply congested appearance, but no ulceration.

The *colon* is healthy.

#### HORSE No. XLV.

Subcutaneous inoculation 2½ hours *post mortem* with soiled blood of rat previously passed through one horse. Maximum local manifestations at seat of inoculation on the 2nd day. Appearance of the hæmatozoon after a latent period of 16 days. Death on the 9th day of the disease. Marked pathological lesions of heart, spleen, &c.

Brown country-bred, aged, healthy and in fair condition.

| Date.         | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | REMARKS.  |
|---------------|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|---|
|               |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |   |
| 1891.         |                 |                 |        |        |        |      |              |      |                     |   |
| October 4 ... | ...             | 36.0            | 36.0   | 36.1   | 30     | 33   | 12           | 14   | Healthy ...         |   |
| " 5 ...       | ...             | 35.5            | 36.0   | 36.3   | 28     | 30   | 10           | 13   | " ...               |   |
| " 6 ...       | ...             | 35.6            | 37.3   | 37.7   | 32     | 34   | 12           | 14   | " ...               | 6th, 2-30 P.M.—The animal was inoculated subcutaneously over the left scapular region, with 1 c.c. of blood, containing swarms of hæmatozoa, taken from the jugular vein of Horse No. XLII, 2½ hours after death. The latter horse had been previously inoculated with blood from the rat ( <i>Mus decumanus</i> ). |
| " 7 ...       | ...             | 36.1            | 37.7   | 38.5   | 33     | 36   | 10           | 14   | Absent ...          | 7th.—There is some swelling and œdema at the seat of inoculation accompanied with slight tenderness.  |
| " 8 ...       | ...             | 36.6            | 37.3   | 38.1   | 30     | 34   | 12           | 16   | " ...               | 8th.—The swelling at the seat of inoculation has entirely disappeared. The visible mucous membranes are clean, and there are no conjunctival peteehiæ.  |
| " 9 ...       | ...             | 37.6            | 39.7   | 37.7   | 28     | 32   | 10           | 12   | " ...               | 9th.—There is some swelling and œdema of the off hind leg, between the fetlock and the hock, but there is no tenderness on pressure.  |
| " 10 ...      | ...             | 37.1            | 38.6   | 37.7   | 26     | 30   | 12           | 12   | " ...               |   |
| " 11 ...      | ...             | 36.4            | 37.5   | 38.3   | 28     | 34   | 12           | 14   | " ...               |   |
| " 12 ...      | ...             | 36.2            | 37.4   | 38.0   | 30     | 28   | 12           | 10   | " ...               |   |
| " 13 ...      | ...             | 35.6            | 37.5   | 37.8   | 26     | 30   | 14           | 12   | " ...               |   |
| " 14 ...      | ...             | 36.0            | 37.1   | 37.3   | 24     | 28   | 12           | 16   | " ...               |   |
| " 15 ...      | ...             | 35.8            | 37.4   | 38.2   | 26     | 28   | 12           | 14   | " ...               |   |
| " 16 ...      | ...             | 35.7            | 36.6   | 37.6   | 24     | 26   | 10           | 12   | " ...               |   |
| " 17 ...      | ...             | 36.1            | 37.5   | 37.8   | 28     | 30   | 12           | 14   | " ...               | 17th.—Some conjunctival ecchymoses.   |
| " 18 ..       | ...             | 35.5            | 37.7   | 37.6   | 26     | 32   | 12           | 12   | " ...               |   |
| " 19 ...      | ...             | 36.0            | 37.7   | 38.3   | 28     | 32   | 14           | 16   | " ...               |   |
| " 20 ...      | ...             | 37.0            | 38.3   | 38.2   | 30     | 34   | 12           | 16   | " ...               |   |
| " 21 ...      | ...             | 36.8            | 37.4   | 37.6   | 36     | 38   | 12           | 14   | " ...               |   |
| " 22 ...      | 1               | 37.4            | 39.6   | 38.5   | 32     | 36   | 12           | 14   | Few ...             |   |
| " 23 ...      | 2               | 38.0            | 39.4   | 40.6   | 36     | 44   | 12           | 16   | Numerous.           |   |
| " 24 ...      | 3               | 39.0            | 40.5   | 40.2   | 52     | 52   | 12           | 16   | Very numerous.      | 24th.—Ecchymoses of left conjunctiva.   |

| Date.          | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | REMARKS.   |
|----------------|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|--|
|                |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |  |
| 1891.          |                 |                 |        |        |        |      |              |      |                     |  |
| October 25 ... | 4               | 38.4            | 40.3   | 40.2   | 50     | 56   | 12           | 16   | Swarming            |  |
| „ 26 ...       | 5               | 37.2            | 39.2   | 39.5   | 48     | 54   | 12           | 12   | Very numerous       | 26th.—Swelling and œdema of fore feet and legs, and ecchymoses of right conjunctiva.         |
| „ 27 ...       | 6               | 39.1            | 38.6   | 38.1   | 44     | 50   | 12           | 10   | Absent ...          | 27th.—All the limbs are swollen and œdematous, and there are ecchymoses on both conjunctivæ. |
| „ 28 ...       | 7               | 37.1            | 37.5   | 37.5   | 40     | 46   | 10           | 12   | „ ...               | 28th.—The visible mucous membranes are tinged yellow.  |
| „ 29 ...       | 8               | 38.1            | 38.4   | 37.3   | 42     | 48   | 12           | 14   | „ ...               |  |
| „ 30 ...       | 9               | 36.7            | 37.8   | 39.2   | 46     | 50   | 12           | 16   | Very numerous.      |  |
| „ 31 ...       | 10              | 36.7            | 38.8   | ...    | 50     | ...  | 14           | ...  | Do. ...             | 31st.—At 2-30 P.M. the animal fell dead suddenly.  |

*Autopsy.*—4 P.M., 31st October 1891.

Body fairly nourished; slight œdema of the hind limbs.

*Thorax.*—The pleural cavities are free from fluid and also from adhesions of the parietal and visceral pleuræ.

*Lungs.*—Are the seat of localized emphysema at their apices. Dotted over the superior surfaces of the organs are irregular shaped extravasations of blood, differing in size, lying under the visceral pleuræ; these are especially numerous in the anterior half of the organs. One small raised lump is situated on the superior border of the left lung, and is about the size of a marble, dark-purple in colour, and on section circumscribed. On section, the lungs are found to be full of blood, which readily escapes from the cut surfaces. Tissues healthy.

The pericardium contains a few ounces of a blood-stained fluid.

*Heart.*—Weighs 6 lbs. 6 ozs. Externally, there is a considerable amount of orange-coloured exudation round the base of the organ, and surrounding the large vessels, as well on the anterior surface accompanying the coronary vessels. This jelly-like exudation and muscular structure at the base are dotted over here and there with petechiæ; whilst on either side of the inter-ventricular groove, there are extensive extravasations of blood lying under the visceral pericardium.

*Internally.*—Right Auricle contains fluid-blood. No extravasations.

*Right Ventricle.*—Few small sub-endocardial extravasations.

*Left Auricle.*—A few very small extravasations.

*Left Ventricle.*—Almost devoid of blood; numerous but small sub-endocardial extravasations. Valves and tissues stained a light yellow colour.

*Liver.*—Weighs 13 lbs. 14½ ozs. There are signs of old perihepatitis, and two large, somewhat circular shaped masses, 3" in diameter, of orange-coloured jelly, on the surface of the organ, about ¼th inch in thickness. There are very numerous yellow coloured, hard concretions scattered over the entire surface of the organ, as well as in the tissues. These circular concretions are easily enucleable. The substance of the organ is of a dark chocolate colour, and contains much blood.

*Spleen.*—Weighs 5 lbs. 9 ozs., and is dotted over the surface of the capsule with irregular shaped petechiæ. On section, tissues are firm and healthy.

*Kidneys.*—Right weighs 1 lb. 6 ozs., Left 1 lb. 10½ ozs. These organs are surrounded *in situ* by orange-coloured exudation, which also enters into the hilum of the organs, together with the vessels and ureters. The capsules strip easily, and present a mottled appearance of the cortical substance, but no petechiæ are observed. On section, the cut surfaces look pale but healthy.

*Stomach.*—Normal externally. On section, the cuticular portion is normal. The mucous membrane of the villous portion is corrugated. There is no ulceration.

*Small Intestines.*—The mucous membrane is covered with a layer of very tenacious slimy mucus, and here and there from the pyloric end of the stomach to the cæcum, isolated patches of congestion are visible, but no trace of ulceration. A few round worms (*Ascaris megalocephala*) were found in the small intestine.

*Large Intestine and Rectum.*—Healthy.

*Brain.*—The membranes present a healthy appearance. The convolutions of the hemispheres are somewhat flattened, owing to the presence of several ounces of fluid in the lateral ventricles. On section, the tissues appear normal in character.

The points of interest in this case are:—

- (i) The transmissibility of the disease from rat to the horse, and then to a second horse.
- (ii) The long incubative period lasting 16 days.
- (iii) The acuteness of the attack, and the rapidity with which death occurred.
- (iv) The pathological changes in the heart found at the *post-mortem*.

#### HORSE No. LXVII.

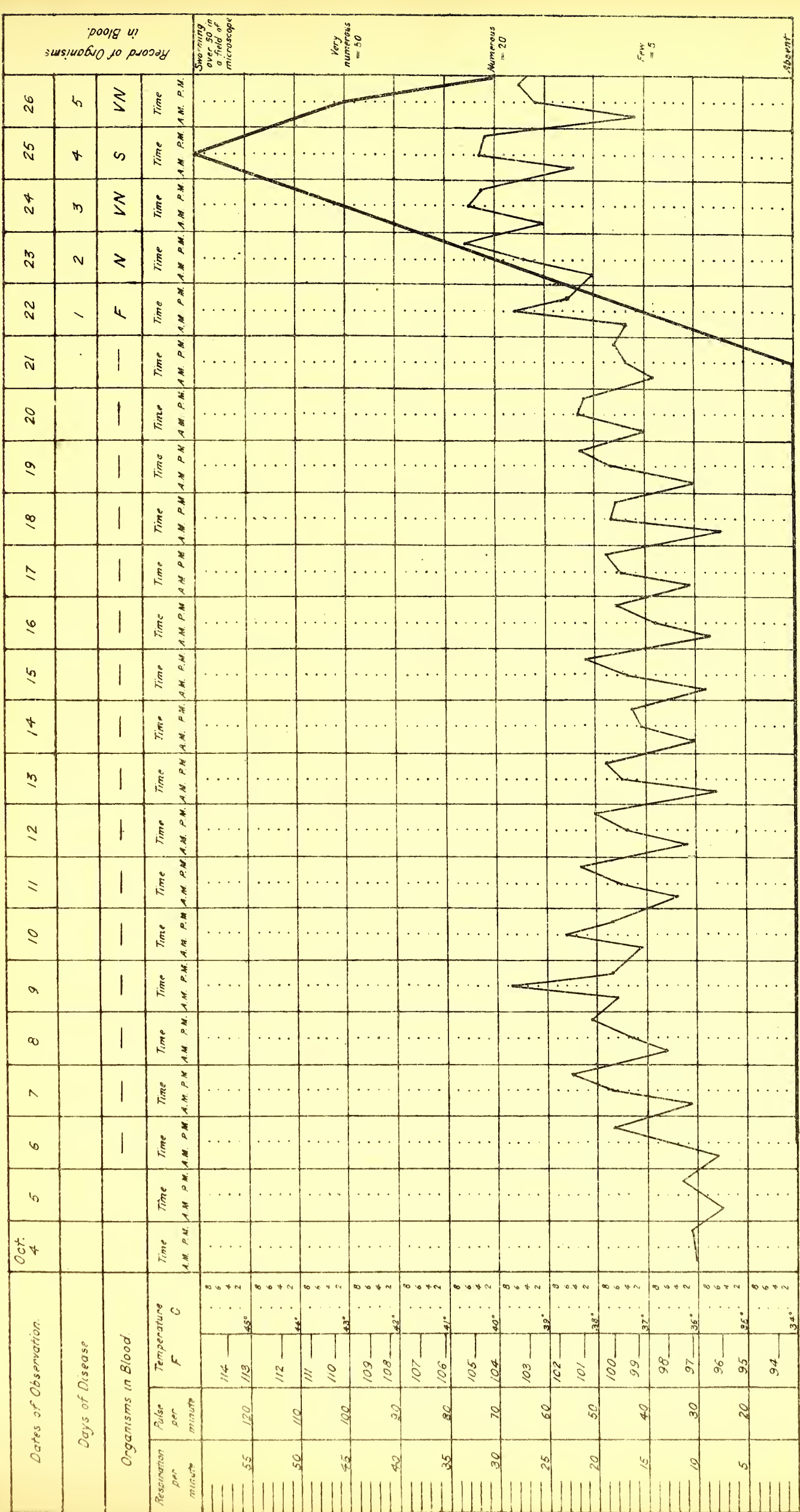
Subcutaneous inoculation with the soiled blood of rat, previously passed through one horse. Maximum local manifestations at seat of inoculation on the 8th day. Appearance of the hæmatozoon after a latent period of 9 days, or



RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

RAT SURRA

Country - Bred Gelding      Age, Aged      Sex, Gelding      Colour, Brown      Date of Inoculation, 6. 10. 91      Result, Death      Date of Result, 31. 10. 91      Register No. XLV



(5 415)

Drawn & Litho East Photocopy Office Phone 1853

X Inoculated Subcutaneously with 1.0cc of blood containing swarms of *Harmatizoa* taken from Jugular Vein of Horse No XLII.



RECORDS OF THE  
UNITED STATES  
DEPARTMENT OF  
THE ARMY  
OFFICE OF THE  
CHIEF OF  
ENGINEERS  
WASHINGTON  
D. C.







54 days less than in the case of the direct inoculation of rat's blood. Hæmatozoa present in blood-stained discharge from the eyes. Death on the 2nd day of the disease. Marked pathological lesions of the organs.

Grey country-bred horse, aged, healthy and in fair condition.

| Date.   | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Urine.  |         |                    |       |            |       |
|---|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|---------|---------|--------------------|-------|------------|-------|
|   |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | Colour. | Sp. Gr. | Reaction.          | Albn. | Hip. Acid. | Phos. |
| 1892.   |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |            |       |
| July 18   | ...             | 36.7            | 36.8   | 36.7   | 72     | 36   | 16           | 17   | Healthy.            | Turbid. | 1.028   | Alkaline.          | Nil   | Nil        | Nil   |
| " 19  | ...             | 35.3            | 37.0   | 37.4   | 32     | 38   | 16           | 18   | "                   | "       | 1.036   | "                  | "     | "          | "     |
| " 20  | ...             | 36.4            | 37.3   | 37.6   | 32     | 40   | 14           | 24   | "                   | "       | 1.032   | "                  | "     | "          | "     |
| " 21  | ...             | 36.4            | 37.6   | 37.6   | 25     | 36   | 11           | 18   | "                   | "       | 1.040   | "                  | "     | "          | "     |
| 21st.—The animal was inoculated subcutaneously on the right shoulder with 1.0 c.c. of blood containing a few hæmatozoa, taken from the jugular vein of Horse LXII.  |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |            |       |
| " 22  | ...             | 36.4            | 37.4   | 37.4   | 33     | 38   | 12           | 16   | Absent.             | Turbid. | 1.026   | "                  | "     | "          | "     |
| 22nd.—Slight swelling .5" in diameter at seat of inoculation.   |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |            |       |
| " 23  | ...             | 37.4            | 37.6   | 37.6   | 28     | 32   | 16           | 20   | Absent.             | Turbid. | 1.018   | Strongly alkaline. | "     | "          | "     |
| 23rd.—Swelling slightly increased.  |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |            |       |
| " 24  | ...             | 36.9            | 38.0   | 38.0   | 30     | 27   | 13           | 10   | Absent.             | Clear.  | 1.012   | Alkaline.          | "     | "          | "     |
| 24th.—Swelling now measures 1.25" in diameter and is raised in the centre. It is soft and only involves the skin. There are numerous dark elaret-coloured petechiæ involving the membranæ nictitantes.                |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |            |       |
| " 25  | ...             | 36.0            | 37.4   | 37.4   | 30     | 32   | 12           | 16   | Absent.             | Turbid. | 1.017   | "                  | "     | "          | "     |
| 25th.—Do. do. do.   |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |            |       |
| " 26  | ...             | 38.0            | 37.4   | 39.0   | 33     | 36   | 20           | 20   | Absent.             | Turbid. | 1.040   | "                  | "     | "          | "     |
| 26th.—The animal is weaker, and the swelling has increased in size and is tense and tender on manipulation.   |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |            |       |
| " 27  | ...             | 37.4            | 38.6   | 39.0   | 48     | 60   | 14           | 16   | Absent.             | Turbid. | 1.040   | "                  | "     | "          | "     |
| 27th.—Tension and tenderness increased.   |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |            |       |
| " 28  | ...             | 38.6            | 39.3   | 39.3   | 43     | 48   | 21           | 16   | Absent.             | Turbid. | 1.036   | "                  | "     | "          | "     |
| 28th.—Swelling at seat of inoculation has increased, and is now 2.5" in diameter; its convex surface presents several nodules hard to the touch. The œdema has spread for several inches below the original swelling. |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |            |       |
| " 29  | ...             | 39.1            | 39.3   | 39.3   | 48     | 52   | 18           | 20   | Absent.             | Turbid. | 1.040   | "                  | "     | "          | "     |
| 29th.—Do. do. do.   |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |            |       |
| " 30  | ...             | 39.3            | 39.6   | 39.7   | 48     | 56   | 12           | 24   | Few.                | Turbid. | 1.038   | "                  | "     | "          | "     |
| 30th.—The animal appears in the same condition, appetite good. The swelling and œdema have, as expected, suddenly diminished in size and the hæmatozoa are present in the blood.                                      |                 |                 |        |        |        |      |              |      |                     |         |         |                    |       |            |       |
| " 31  | ...             | 40.0            | 40.0   | 39.3   | 60     | 64   | 15           | 20   | Very numerous.      | Clear.  | 1.040   | Strongly acid.     | "     | "          | "     |

31st, A.M.—The animal is weaker, but stands without assistance. The swelling and œdema below the seat of inoculation are disappearing, and the tumour itself is now only half the size, and soft to the touch. There is œdema of the fore limbs. The appetite continued unimpaired. 6 P.M.—The sheath is swollen. Later, the animal became weaker and at 11 P.M. was unable to stand.

1st August.—3 A.M.—Death.

*Autopsy*, six hours after death.

Body emaciated. Limbs and sheath swollen and œdematous.

*Thorax*.—The pleural cavities are free from fluid, and there are no pleuritic adhesions. Lying beneath the parietal pleura, there are numerous patches of blood, only observable on the inner surface of the ribs, and not over the intercostal muscles.

*Trachea*.—The trachea internally presents a few extravasations, and these are entirely confined to the surface of the mucous membrane lying on the cartilaginous rings, and not on the tissue lining the interspaces. There is a certain amount of frothy mucus exuding from the bronchi and running into the trachea.

*Right Lung*.—The apex and inferior border are the seat of well marked emphysema. Dotted over the surface of the whole organ are extravasations about the size of a two-anna piece, dark-purple in the centre, and presenting a lighter hue externally. On section, the lung-tissue is of a dark-red colour, whilst a yellow serous fluid, mixed with air, flows from the cut surfaces. On pressure, a considerable quantity of the same kind of fluid escapes. There is a patch, about 2" in diameter, at the base of the posterior lobe, which appears to be semi-solid; but it is found to float in water. A semi-gelatinous material exudes from the smaller bronchi, when cut across, and all the vessels contain black clotted blood.

*Left Lung*.—The anterior portion, with the exception of the apex for a distance of two inches, together with the inferior border, are the seat of well marked emphysema. The extreme apex, and for two inches posteriorly, the tissue is of a dark-red colour and consolidated. Scattered over the surface of the lung, the same extravasations as seen on the right organ are noticeable; they lie just under the visceral pleura, and do not appear to invade the lung-tissue. These extravasations are particularly well marked on the inferior surface of the organ, and are more extensive than those on the superior surface. On section, a deeply blood-stained fluid, containing a considerable amount of air, escapes from the cut surfaces; and on pressure, the fluid loses its red and presents a yellow colour.

The *pericardium* contains about six ounces of a deeply blood-stained fluid. The internal surface of the membrane is dotted over, especially round the portion covering the base of the organ, with several circular dark-coloured ecchymoses.



**Heart.**—Weighs 5 lbs. 12 ozs., measures 9" from base to apex, and the circumference is 20" at the base. The base of the organ is surrounded by a gelatinous material of a reddish-orange colour, which runs down on either side of the coronary vessels, anterior and posterior, more especially the former. *External Surface* of the *Right Auricle* is free from ecchymoses, but in the sulcus between it and the large vessels, there is a large extravasation  $1" \times \frac{3}{4}"$ , as well as a few small ones dotted around.

*Right Ventricle* presents in its lower half an extensive bulla, triangular in form and measuring 5" in length and 3" at its widest part. It is distended with fluid which appears to be pure blood, very dark in colour, of which about an ounce escaped on incision; posteriorly and to the right joining this bulla, is another large extravasation  $2" \times 1\frac{1}{2}"$ , very dark in colour and lying under the visceral pericardium. There are also a few small ones dotted over the surface of the ventricle.

*Left Auricle.*—Presents a few small ecchymoses, circular in form and dark in colour, about an eighth of an inch in diameter on its external surface.

*Left Ventricle.*—Presents two large extravasations, one close to the anterior coronary vessels  $2" \times 2"$ , and a second one extending from the base to the apex, situated a little posteriorly, but not so extensive as the former.

*Internal Surface.*—On section, the *Right Auricle* contains a little dark semi-fluid blood containing a few clots, and there are a few sub-endocardial petechiæ; the muscles look pale and somewhat fatty.

The *Right Ventricle.*—Wall hypertrophied,  $\frac{13}{16}"$  in thickness, and the whole presenting a black appearance. On clearing away the dark clots and semi-fluid blood, the inner surface is found to present a perfectly black appearance. The endocardial surface is occupied by numerous, irregular shaped, raised and smooth black eminences, which for the most part run in lines from apex to base, varying considerably in size, from 2" in length and  $\frac{1}{8}"$  in breadth to small ones only  $\frac{1}{8}"$  in diameter. The larger ones are, for the most part, found near the apex of the cavity, but are especially well marked on the septum separating the pulmonary and tricuspid openings. These extravasations involve two of the three cusps of the pulmonary valve in their lower halves, but the tricuspid valves are free.

The *Left Auricle* is pale, contains very little fluid-blood and a few small sub-endocardial petechiæ. The walls of the *left ventricle* are exceedingly hypertrophied, measuring  $1\frac{3}{4}"$  in thickness; it is, however, contracted and almost empty. It presents the same form of sub-endocardial extravasations as described in the *Right*; here, however, the musculi-papillares are principally involved. The bicuspid and aortic valves are healthy. Large and firm orange-coloured coagula project from the openings of the large vessels, and can easily be drawn out.

The *Spleen* weighs 2 lbs. 5 ozs., is dotted over, especially at its widest part and apex, with dark brick-red coloured patches, irregular in shape, varying from  $\frac{1}{8}"$  in length to  $\frac{1}{5}"$  in breadth, to mere specks. These spots are well marked on both surfaces and lie directly under the capsule. The tissue of the organ is firm, and on section presents a healthy appearance.

*Right Kidney.*—Weighs 1 lb.  $3\frac{1}{2}$  ozs., is pale, presents no petechiæ on its surface, but the superficial veins are somewhat distended. On section, the *cortical* portion is pale; the *medullary* is also somewhat pallid. The inner surface of the pelvis presents several petechiæ, mostly circular in form, dark in colour, and varying considerably in size from a split-pea to a small pin's head.

*Left Kidney.*—Weighs 1 lb.  $4\frac{1}{2}$  ozs., is somewhat pale, and the capsule strips easily. On section, the organ looks somewhat pale, but there are numerous petechiæ in the pelvis, as in the right kidney.

*Liver.*—Weighs 8 lbs. 6 ozs. The convex surface of the organ presents signs of old inflammation, is of a chocolate colour, while here and there are patches more or less tinged a light-yellow. The anterior and posterior surfaces present small sulci about  $\frac{1}{16}"$  in depth, and on passing the hand over the organ, large numbers of shot-like bodies can be felt half buried in the tissues of the organ. These bodies are light-yellow in colour, vary in size and are hard and gritty to the touch. On section of the organ, the tissue presents a yellowish tinge; fluid blood runs from the cut ends of the vessels, and there are some few caseous bodies imbedded in the substance of the organ, which are easily nucleable.

The *Abdominal Cavity.*—The posterior surface of the diaphragm is also dotted over with extravasations, but they are situated at some distance apart. The peritoneum, generally, is to a greater or less extent involved by these extravasations.

*Stomach.*—Externally, the organ presents nothing pathological. On section, the *cuticular* portion, for the most part, is white in colour, but a portion of it is dotted over with very small yellow flakes, easily detachable. The *villous* portion presents a large irregular patch somewhat rose-coloured, which appears to be denuded of its mucous membrane; there is no ulceration, and the rose colour appears to be due to congestion of the sublying vessels. There is a raised lump, about  $1\frac{3}{4}" \times \frac{3}{4}"$ , lying 2" from the cuticular border, which is hard to the touch, and, on section of the mucous membrane, is found to contain a dark blood clot,  $\frac{7}{8}"$  in thickness and  $1\frac{1}{2}"$  in length; this is found to be lying on the muscular coat.

*Intestines.*—Eight feet from the pyloric end of the stomach and therefore in the *jejunum*, there are several ulcers occupying the seat of Peyer's patches; these are elongated ovals in shape,  $\frac{3}{4}" \times \frac{1}{6}"$ . At the commencement of the *ileum*, there are patches of congestion which occur at about every 3 or 4 feet for a considerable distance, and when nearing the termination of the ileo-cæcal-valve, two or three cicatrices are present, evidently of recent date.

*Cæcum and Colon.*—Contain partially digested food, and there are a few petechiæ scattered over the mucous membrane of the organ.

*Rectum.*—Healthy. The only parasite found was one female specimen of *Strongylus armatus*.

*Bladder.*—Is distended with fluid and appears to have a considerable amount of blood extravasated into its walls. On section, it contains about two litres of a dark sherry-coloured fluid, strongly acid in reaction and Sp. Gr: 1021. The internal surface of the organ presents dark marbled patches, some almost black, others of a dark-red colour, but involving more or less the whole internal surface of the organ.

*Brain.*—On its surface, the veins are somewhat distended, the tissue is however firm and healthy looking. On removing the organ from the skull, about  $1\frac{1}{2}$  ounces of fluid escaped. On section, the organ is pale and the lateral ventricles are large and distended with fluid.

*Remarks.*—This animal was in fair condition, and after having been kept under observation for three days, during which period no symptoms of disease were detected, it was inoculated with 1 c. c. of blood from Horse No. LXII, which had been successfully inoculated from the rat. On the 22nd, the day following inoculation, there was slight œdema about the thighs, which increased in extent until the 29th, but continued till death took place, although gradu-



RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Country Bred \_\_\_\_\_ Age, Aged \_\_\_\_\_ Sex, Gelding \_\_\_\_\_ Colour, Grey \_\_\_\_\_

Disease "Par Surra" \_\_\_\_\_ Date of Inoculation, 21. 7. 92. \_\_\_\_\_ Result, Death \_\_\_\_\_ Date of Result, 1. 8. 92 \_\_\_\_\_ Register No. LXVII

Age, Aged — Sex, Gelding — Colour, Grey

*Date of Inoculation, 21. 7. 92. Result, Death Date of Result, 1. 8. 92 Register No.*

| Dates of Observation.                     | July | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | Aug. |
|---|------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|------|
| Days of Disease                           |      |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 2  | .3   |
| Organisms in Blood                        |      |    |    |    |    |    |    |    |    |    |    |    |    | F  | VN |      |
| Respiration per minute                    |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |
| Pulse per minute                          |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |
| Temperature F                             |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |
| C   |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |
| Record of Organisms in Blood.             |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |
| Swarming over 50 in a field at microscope |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |
| Very Numerous = 50                        |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |
| Numerous = 20                             |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |
| Few = 5                                   |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |
| Absent                                    |      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |

Death 3 a.m.

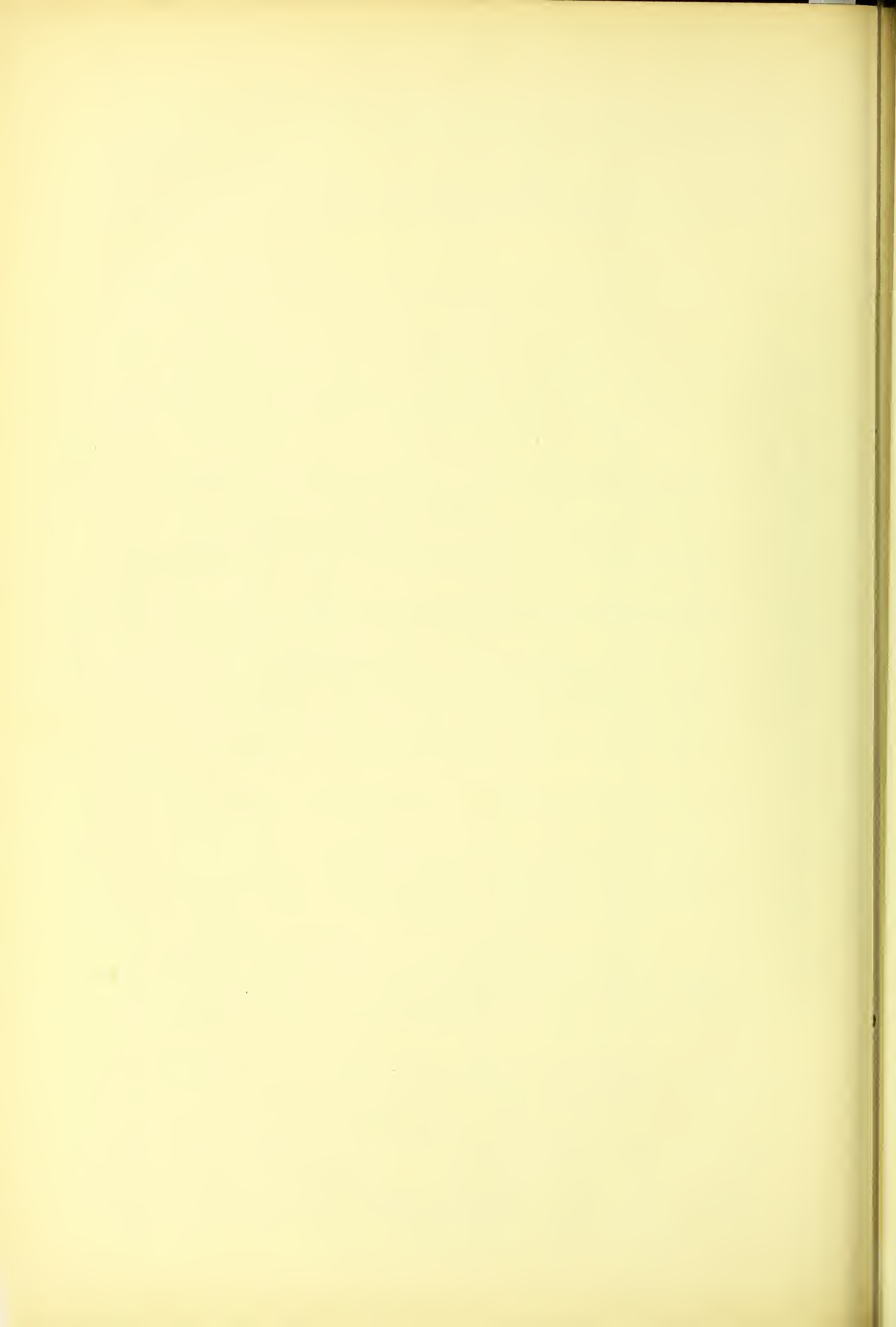
Temperature

Drawn by Lihio, Govt Photoduplino-Office Poona 1893

Pulse.....  
Respiration.....

\* Subcutaneously inoculated with 1.0 cc. of blood containing few hematocytes taken from the jugular vein of Horse No. LXII.





ally decreasing. With the exception of numerous petechiæ on the membranæ nictitantes, which appeared on the 24th, and the rise of temperature on the 26th, which became slightly above normal, and continued on the 27th, 28th and 29th, there was no noticeable symptom of disease, and the blood remained free from hæmatozoa. On the 30th, the swelling at the seat of inoculation suddenly diminished in size, and a few hæmatozoa were detected in the blood. On the 31st, symptoms of Surra appeared; the animal became weak, and both fore and hind limbs œdematous. Towards evening, the sheath was swollen, and the animal became too weak to stand; a few hours later he fell, and death took place at 3 A.M. It should be noted that up to 30th, the urine had been alkaline in reaction, but on the 31st became strongly acid.

The points of great interest in this case are:—

(i) That Rat-Surra is transmissible from rat to horse and again to horse; the period of incubation becoming much shorter, and the virulence of the disease appears to be much increased.

(ii) The short period the animal lived after the hæmatoozon appeared in the blood.

(iii) The extraordinary pathological lesions noted, and the rapidity with which they were produced.

#### HORSE No. XXXVII.

Subcutaneous inoculation with soiled blood of rat, previously passed through *two* horses. Maximum local manifestations at seat of inoculation on the 4th day. Appearance of the hæmatoozon after a latent period of 5 days. Death on the 3rd day of the disease. Marked pathological lesions in the heart.

Chestnut country-bred, aged, healthy and in fair condition.

| Date.        | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | REMARKS.   |
|--------------|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|--|
|              |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |  |
| 1891.        |                 |                 |        |        |        |      |              |      |                     |  |
| August 2 ... | ...             | 36.5            | 36.6   | 36.9   | 36     | 40   | 11           | 14   | Healthy ...         |  |
| " 3 ...      | ...             | 36.5            | 36.6   | 36.7   | 34     | 35   | 12           | 14   | " ...               |  |
| " 4 ...      | ...             | 36.6            | 36.5   | 36.4   | 30     | 32   | 11           | 12   | " ...               |  |
| " 5 ...      | ...             | 35.8            | 36.3   | 36.5   | 31     | 34   | 12           | 15   | " ...               |  |
| " 6 ...      | ...             | 35.8            | 36.2   | 36.4   | 30     | 32   | 11           | 13   | " ...               |  |
| " 7 ...      | ...             | 35.7            | 36.3   | 36.3   | 28     | 36   | 10           | 12   | " ...               |  |
| " 8 ...      | ...             | 35.8            | 36.1   | 36.3   | 29     | 36   | 10           | 13   | " ...               |  |
| " 9 ...      | ...             | 35.7            | 36.3   | 36.4   | 33     | 38   | 11           | 14   | " ...               |  |
| " 10 ...     | ...             | 36.0            | 36.0   | 35.8   | 28     | 38   | 11           | 12   | " ...               | 10th, 5 P.M.—The animal was inoculated subcutaneously over the left shoulder with 0.7 c.c. of serum drawn from the jugular vein of Horse No. XXXV, 6½ hours after death. The blood on the day previous to death contained very numerous hæmatozoa.   |
| " 11 ...     | ...             | 35.4            | 36.0   | 36.1   | 22     | 34   | 10           | 12   | Absent ...          | 11th.—There is a small circular and raised swelling 1" in diameter at seat of inoculation.   |
| " 12 ...     | ...             | 35.1            | 36.0   | 36.3   | 28     | 36   | 11           | 14   | " ...               | 12th.—Swelling now measures 1.75" in diameter, and is tense and tender on manipulation.  |
| " 13 ...     | ...             | 35.2            | 35.8   | 36.0   | 26     | 48   | 10           | 15   | " ...               | 13th.—Swelling still further increased, and is now surrounded with an œdematous zone; the tenderness is more perceptible.  |
| " 14 ...     | ...             | 35.2            | 36.0   | 36.2   | 40     | 58   | 12           | 16   | " ...               | 14th.—Do. do.  |
| " 15 ...     | 1               | 35.8            | 36.3   | 36.4   | 42     | 60   | 14           | 18   | Few ...             | 15th.—The tension and tenderness is reduced, but size of tumour remains unchanged.   |
| " 16 ...     | 2               | 35.8            | 36.1   | 36.3   | 68     | 80   | 16           | 20   | Numerous.           | 16th.—The animal is weaker, numerous conjunctival petechiæ have appeared, and the visible mucous membranes are tinged yellow. Some swelling and œdema of the lower extremities, especially the hind limbs; the appetite remains good, and fæces normal. 6 P.M.—The animal is getting rapidly weaker. |
| " 17 ...     | 3               | 38.2            | ...    | ...    | 120    | ...  | 28           | ...  | ...                 | 17th.—The animal is unable to rise at 10.45 A.M., the pulsations of the heart were counted by placing a finger on the apex of the organ, and were found to be 226 per minute. Death supervened at 11 A.M.  |

Autopsy at noon.

Body emaciated; membranes of a yellow tinge; mucous membrane of mouth pale and anæmic.

*Thorax*.—No fluid in the cavity of the pleuræ, and no adhesions.

*Lungs*.—The apices as well as the free borders of both lungs, are the seat of well marked localized emphysema. Both organs are dotted over the surfaces with extravasations involving the tissues for a varying depth,  $\frac{1}{16}$ th to  $\frac{1}{4}$ th of an inch. *On section*, the upper and middle lobes present a peculiar reddish-yellow colour, but the tissues are fully distended with air. The lower lobes are dark or variegated in colour on their cut surfaces, and present a dark-red colour, which resembles an early pneumonic condition.

Little or no fluid in the *pericardial cavity*.

*Heart*.—The large vessels situated at the base of the organ are covered with a layer of sherry-coloured exudation varying from  $\frac{1}{4}$ " to 1" in depth, which is especially extensive and deep over the pulmonary artery. The *external surface* of the heart is almost covered with extravasations of blood, some very extensive, especially round the base and along the course of the coronary vessels. Extravasations of blood also involve the exudation-material.

*Internally*.—The *right auricle* contains semi-fluid dark-coloured blood, and a few small sub-endocardial extravasations. The *right ventricle* also contains dark clots, few and small, but the endocardial lining, for the most part, presents a totally black colour, especially over the inter-ventricular wall, due to extraordinarily extensive sub-endocardial extravasations, which are found to involve the muscular wall to some depth. The tricuspid and pulmonary valves are healthy, except for a peculiar yellow tinge which is common to the membranes of the whole body. The *left auricle* and *ventricle* present a few extravasations, small in size, and only superficial compared with those found in the right ventricle. Valves healthy.

*Liver*.—Weighs 7 lbs. 8 ozs. and appears to be very small. The convex surface presents old signs of perihepatitis, and is of a dirty brown colour.

*Spleen*.—Weighs 1 lb. 6 ozs. Numerous and extensive extravasations are present on both surfaces of the organ. *On section*, the tissues are firm and appear healthy.

*Stomach*.—Small, contracted. *On section*, the *cuticular* portion is healthy. The mucous membrane of the *villous* portion is corrugated and of a more or less red colour, with small dark-red patches, situated on the summits of the rugæ. There are numerous small nematodes "*Spiroptera megastoma*" singly and in skeins, dotted over the surface of the villous portion between the rugæ.

*Kidneys*.—*Right* weighs 1 lb.  $1\frac{1}{2}$  ozs., *Left*  $15\frac{1}{2}$  ozs. Both organs are found lying in a layer of exudation  $\frac{1}{2}$ " in thickness. The organs are small, dark in colour, and the stellate veins injected. The capsules do not strip easily. *On section*, the cortical zone in each organ appears somewhat narrower than normal; the tissues are congested.

*Intestines*.—Normal in appearance.

*Brain*.—The membranes are somewhat pale in colour. The superficial veins are not fully distended; the brain substance is pale, and there is about three drachms of clear fluid in each lateral ventricle. There are no extravasations on the surface, or *on section* of the organ.



RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Country-Bred Horse      Age, Aged      Sex, Gelding      Colour, Chestnut  
Disease, Rat-Horse-Surra      Date of Inoculation, 10.8.91      Result, Death      Date of Result, 17.8.91      Register No. XXXVII.

| Dates of Observation         |                        | Aug.<br>2        | 3                | 4    | 5  | 6    | 7  | 8    | 9  | 10   | 11 | 12   | 13 | 14   | 15 | 16   | 17 |
|------------------------------|------------------------|------------------|------------------|------|----|------|----|------|----|------|----|------|----|------|----|------|----|
| Days of Disease              |                        |                  |                  |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
| Respiration<br>per<br>minute | Pulse<br>per<br>minute | Temperature<br>F | Temperature<br>C | Time |    | Time |    | Time |    | Time |    | Time |    | Time |    | Time |    |
|                              |                        |                  |                  | AM   | PM | AM   | PM | AM   | PM | AM   | PM | AM   | PM | AM   | PM | AM   | PM |
| 55                           | 120                    | 114              | 44               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
| 50                           | 110                    | 113              | 43               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
| 55                           | 100                    | 112              | 43               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
| 42                           | 80                     | 111              | 43               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
| 35                           | 70                     | 110              | 43               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
| 30                           | 60                     | 109              | 43               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
| 25                           | 50                     | 108              | 42               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
| 20                           | 40                     | 107              | 42               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
| 15                           | 30                     | 106              | 42               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
| 10                           | 20                     | 105              | 41               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
| 5                            | 10                     | 104              | 40               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
|                              |                        | 103              | 40               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
|                              |                        | 102              | 39               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
|                              |                        | 101              | 38               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
|                              |                        | 100              | 38               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
|                              |                        | 99               | 37               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
|                              |                        | 98               | 37               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
|                              |                        | 97               | 36               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
|                              |                        | 96               | 36               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
|                              |                        | 95               | 35               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |
|                              |                        | 94               | 34               |      |    |      |    |      |    |      |    |      |    |      |    |      |    |

Death at 11 a.m.

Hamatocrit curve  
Temperature

x Inoculated Subcutaneously with 0.7cc of blood serum drawn from Jugular Vein of Horse XXXV six and a half hours. P. M.



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B.  
RAT SURRA

APPENDIX III.

SUBCUTANEOUS INOCULATION WITH  
SOILED RAT'S BLOOD.

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RESULTS NEGATIVE.

HORSES Nos. LVII, LII, XLIV.

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Register No. LVII

Pulse . . . . .  
Respiration . . . . .





*Country-Bred Entire, inoculated with Rat's blood containing numerous haematzoa.*

Age, aged \_\_\_\_\_ Sex, Entire \_\_\_\_\_ Colour, Brown

- Colour, Brown

*Disease, not communicated*

*Date of Inoculation, 14.1.92.*

Result, Death

Date of Result, 24. 2. 92 — Register No. LVII

III

| Dates of Observation.         |                        | Jan.        |     | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | Feb. |      |
|-------------------------------|------------------------|-------------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Days of Disease               |                        |             |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1    | 2    |
| Organisms in Blood.           |                        |             |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Respiration<br>per<br>minute. | Pulse<br>per<br>minute | Temperature | F   | C    | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |
|                               |                        |             |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        |             | 114 | 45°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
| 55.                           | 120                    | 113         | 112 | 44°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 111 | 43°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
| 50                            | 110                    | 110         | 109 | 42°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 108 | 41°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
| 45                            | 100                    | 107         | 106 | 40°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 105 | 39°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
| 40                            | 90                     | 104         | 103 | 38°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 102 | 37°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
| 35                            | 80                     | 101         | 100 | 36°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 99  | 35°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
| 30                            | 70                     | 98          | 97  | 34°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 96  | 33°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
| 25                            | 60                     | 95          | 94  | 32°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 93  | 31°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
| 20                            | 50                     | 92          | 91  | 30°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 90  | 29°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
| 15                            | 40                     | 89          | 88  | 28°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 87  | 27°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
| 10                            | 30                     | 86          | 85  | 26°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 84  | 25°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
| 5                             | 20                     | 83          | 82  | 24°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 81  | 23°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 80  | 22°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 79  | 21°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 78  | 20°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 77  | 19°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 76  | 18°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 75  | 17°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 74  | 16°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 73  | 15°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 72  | 14°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 71  | 13°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 70  | 12°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 69  | 11°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 68  | 10°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 67  | 9°   | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 66  | 8°   | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 65  | 7°   | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 64  | 6°   | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 63  | 5°   | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 62  | 4°   | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 61  | 3°   | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 60  | 2°   | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 59  | 1°   | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 58  | 0°   | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 57  | -1°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 56  | -2°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 55  | -3°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 54  | -4°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 53  | -5°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 52  | -6°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 51  | -7°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 50  | -8°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 49  | -9°  | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 48  | -10° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 47  | -11° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 46  | -12° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 45  | -13° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 44  | -14° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 43  | -15° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 42  | -16° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 41  | -17° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 40  | -18° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 39  | -19° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 38  | -20° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 37  | -21° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 36  | -22° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 35  | -23° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 34  | -24° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 33  | -25° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 32  | -26° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 31  | -27° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 30  | -28° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 29  | -29° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 28  | -30° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 27  | -31° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 26  | -32° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 25  | -33° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 24  | -34° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 23  | -35° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 22  | -36° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 21  | -37° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 20  | -38° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 19  | -39° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 18  | -40° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 17  | -41° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 16  | -42° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 15  | -43° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 14  | -44° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 13  | -45° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |
|                               |                        |             | 12  | -46° | 8    | 4    | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |      |      |      |      |      |      |      |      |      |

(5.415)

### Haematozoon Curve

Drawn & Litho: Govt Photodupco: Office, Poona 1893.

|                  |       |
|------------------|-------|
| Pulse.....       | ..... |
| Respiration..... | ..... |

X Inoculated subcutaneously with 2 c.c. of blood containing numerous hematzoa, taken from the Rat (*Mus decumanus*) immediately after death.

## HORSE No. LVII.

Brown country-bred, aged, in fair condition.

| Date.      | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | REMARKS.   |
|------------|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|--|
|            |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |  |
| 1892.      |                 |                 |        |        |        |      |              |      |                     |  |
| January 11 | ...             | ...             | ...    | 37.8   | ...    | ...  | ...          | ...  | Healthy             | ...  |
| " 12       | ...             | 35.5            | ...    | 38.0   | 32     | 36   | 15           | ...  | "                   | ...  |
| " 13       | ...             | 35.7            | ...    | 38.1   | ...    | ...  | ...          | ...  | "                   | ...  |
| " 14       | ...             | 36.1            | ...    | 38.1   | ...    | ...  | ...          | ...  | "                   | 14th, 3-30 P.M.—The animal was subcutaneously inoculated over the right scapular region with 2.0 c.c. of blood containing numerous hæmatozoa, taken from the rat ( <i>Mus decumanus</i> ) immediately after death. |
| " 15       | ...             | 35.6            | 36.6   | 38.2   | 82     | 36   | 15           | 15   | Absent              | An oedematous swelling at the seat of inoculation, somewhat soft, but not painful.   |
| " 16       | ...             | 35.4            | 37.0   | 38.1   | 34     | 36   | 14           | 15   | "                   | The swelling is more tense and hard, but not tender.   |
| " 17       | ...             | 36.0            | 37.4   | 38.1   | 34     | 38   | 14           | 15   | "                   | The swelling is somewhat larger and remains hard. Conjunctival membranes clear.  |
| " 18       | ...             | 36.4            | 37.1   | 37.8   | 36     | 34   | 14           | 14   | "                   | Swelling reduced in size, and is softer. Slight discharge of greenish fluid after defecation.  |
| " 19       | ...             | 37.0            | 37.7   | 38.0   | 30     | 32   | 14           | 14   | "                   | Swelling much reduced. Now measuring only 1.5" x 1.5" x 0.5", and is softer. Symptoms of indigestion, from insufficient mastication of gram, due to age.   |
| " 20       | ...             | 36.2            | 37.6   | 38.2   | 28     | 28   | 12           | 12   | "                   | Condition unchanged, flow of fluid from the bowels somewhat increased.   |
| " 21       | ...             | 36.7            | 37.4   | 38.6   | 24     | 26   | 12           | 14   | "                   | Swelling further reduced in size. Conjunctivæ clear. Appetite good.  |
| " 22       | ...             | 37.0            | 37.7   | 38.0   | 24     | 28   | 10           | 12   | "                   | Do. do. and softer conjunctivæ clear.  |
| " 23       | ...             | 35.7            | 37.1   | 38.5   | 24     | 26   | 10           | 10   | "                   | Condition unchanged.   |
| " 24       | ...             | 36.2            | 38.0   | 38.8   | 24     | 26   | 10           | 10   | "                   | Do. flow of fluid from the bowels continues.   |
| " 25       | ...             | 37.2            | 37.8   | 38.1   | 24     | 26   | 12           | 12   | "                   | Do.  |
| " 26       | ...             | 36.1            | 37.8   | 38.2   | 27     | 28   | 12           | 13   | "                   | Do.  |
| " 27       | ...             | 37.6            | 39.4   | 39.4   | 27     | 30   | 10           | 14   | "                   | Do.  |
| " 28       | ...             | 36.3            | 38.2   | 39.1   | 27     | 30   | 10           | 10   | "                   | Do. swelling at seat of inoculation almost subsided.   |
| " 29       | ...             | 36.1            | 38.0   | 39.2   | 27     | 29   | 10           | 11   | "                   | Do.  |
| " 30       | ...             | 36.4            | 39.5   | 39.7   | 28     | 30   | 8            | 14   | "                   | Do.  |
| " 31       | ...             | 37.5            | 38.5   | 39.2   | 30     | 32   | 8            | 10   | "                   | Swelling at seat of inoculation entirely disappeared. No tenderness on pressure, only a slight thickening to be felt subcutaneously.   |
| February 1 | ...             | 36.2            | 39.2   | 39.5   | 30     | 32   | 10           | 12   | "                   | Condition unchanged.   |
| " 2        | ...             | 37.0            | 38.0   | 39.7   | 30     | 32   | 10           | 13   | "                   | Do.  |
| " 3        | ...             | 37.4            | 39.5   | 39.5   | 34     | 34   | 9            | 13   | "                   | Do.  |
| " 4        | ...             | 36.8            | 39.3   | 39.2   | 33     | 34   | 9            | 12   | "                   | Do.  |
| " 5        | ...             | 36.3            | 38.8   | 38.5   | 30     | 32   | 9            | 8    | "                   | Do.  |
| " 6        | ...             | 36.4            | 38.2   | 39.4   | 30     | 32   | 9            | 13   | "                   | Do.  |
| " 7        | ...             | 37.0            | 38.0   | 38.5   | 32     | 30   | 8            | 12   | "                   | Do.  |
| " 8        | ...             | 36.3            | 37.5   | 38.6   | 30     | 28   | 9            | 10   | "                   | Do.  |
| " 9        | ...             | 36.3            | 37.7   | 38.5   | 30     | 28   | 9            | 9    | "                   | Do.  |
| " 10       | ...             | 37.0            | 38.2   | 38.5   | 32     | 28   | 9            | 9    | "                   | Do.  |
| " 11       | ...             | 37.2            | 37.6   | 37.8   | 32     | 28   | 9            | 9    | "                   | Do.  |
| " 12       | ...             | 35.6            | 37.1   | 38.0   | 30     | 28   | 8            | 10   | "                   | Do.  |
| " 13       | ...             | 36.7            | 37.6   | 38.1   | 31     | 28   | 9            | 11   | "                   | Do.  |
| " 14       | ...             | 36.1            | 37.0   | 38.0   | 30     | 30   | 9            | 9    | "                   | Do.  |
| " 15       | ...             | 36.1            | 37.0   | 39.2   | 30     | 34   | 9            | 14   | "                   | Do.  |
| " 16       | ...             | 36.4            | 37.3   | 39.2   | 30     | 36   | 9            | 14   | "                   | Do.  |
| " 17       | ...             | 36.4            | 37.6   | 38.4   | 28     | 38   | 9            | 11   | "                   | Do.  |
| " 18       | ...             | 37.0            | 37.6   | 39.0   | 30     | 40   | 10           | 14   | "                   | Do.  |
| " 19       | ...             | 36.3            | 38.0   | 38.4   | 28     | 36   | 9            | 12   | "                   | Do.  |
| " 20       | ...             | 36.3            | 38.0   | 38.1   | 28     | 35   | 9            | 10   | "                   | Do.  |
| " 21       | ...             | 36.2            | 38.1   | 38.6   | 29     | 36   | 8            | 12   | "                   | Do.  |
| " 22       | ...             | 36.0            | 37.6   | 38.1   | 27     | 32   | 9            | 14   | "                   | Do.  |
| " 23       | ...             | 36.3            | 37.8   | 37.8   | 30     | 32   | 9            | 16   | "                   | Do.  |
| " 24       | ...             | 36.1            | 37.6   | ...    | 29     | 29   | 9            | 12   | "                   | Do.  |



*Remarks.*—This horse was inoculated subcutaneously with the blood of the rat, containing numerous hæmatozoa January 14th, 1892, and as all swelling had absolutely disappeared from the seat of inoculation for a period of 26 days, and the symptoms of mal-assimilation of food still continued, the animal was destroyed with the aid of chloroform, no hæmatozoa at any time since the date of inoculation having been observed in the blood.

## HORSE No. LII.

Black country-bred pony, aged, in good condition.

| Date.      | Day of Disease. | Temperature °C. |        |        | Hæmatozoa in Blood. | REMARKS.   |
|------------|-----------------|-----------------|--------|--------|---------------------|--|
|            |                 | A.M.            | 1 P.M. | 5 P.M. |                     |  |
| 1891.      |                 |                 |        |        |                     |  |
| October 23 | ...             | 36.5            | ...    | 38.1   | Healthy             | ...  |
| " 24       | ...             | 36.7            | ...    | 37.4   | "                   | ...  |
| " 25       | ...             | 36.1            | ...    | 37.7   | "                   | ...  |
| " 26       | ...             | 36.8            | ...    | 37.6   | "                   | ...  |
| " 27       | ...             | 37.3            | ...    | 38.2   | "                   | ...  |
| " 28       | ...             | 36.7            | ...    | 38.1   | "                   | ...  |
| " 29       | ...             | 37.2            | ...    | 37.8   | Nematodes...        | 29th.—Nematodes in the blood.  |
| " 30       | ...             | 37.3            | ...    | 38.1   | Absent              | 30th.—Blood free from nematodes. 5-15 P.M. The animal was inoculated subcutaneously over the right and left scapular regions, with 2.0 c.c. of blood containing numerous hæmatozoa, drawn from the hearts of two rats ( <i>Mus decumanus</i> ), mixed with .6 per cent. salt solution (immediately after death). |
| " 31       | ...             | 37.4            | 38.4   | 38.3   | Hæmatozoa absent.   | 31st.—At the seat of inoculation on either side, there is a raised swelling, apparently from manipulation full of a jelly-like material.   |
| November 1 | ...             | 36.7            | 38.1   | 38.3   | "                   | 1st.—The swelling on the right side continues unchanged; on the left, decreased.   |
| " 2        | ...             | 37.1            | 38.1   | 37.3   | "                   | ...  |
| " 3        | ...             | 36.7            | 38.1   | 38.3   | "                   | ...  |
| " 4        | ...             | 36.7            | 37.5   | 38.2   | "                   | ...  |
| " 5        | ...             | 37.2            | 37.8   | 38.3   | Nematodes...        | ...  |
| " 6        | ...             | 37.6            | 38.2   | 37.7   | Absent              | ...  |
| " 7        | ...             | 37.2            | 38.2   | 38.3   | "                   | ...  |
| " 8        | ...             | 38.1            | 39.0   | 39.0   | "                   | 8th.—There is a slight muco-purulent discharge from both nostrils. Considerable swelling and œdema at the seat of inoculation over the left scapular.  |
| " 9        | ...             | 39.5            | 39.8   | 39.6   | Nematodes...        | 9th.—Discharge from nostrils ceased. A second swelling has appeared, posterior to the one over the left scapular region. No. 1 measures 5.5" × 3.5" × 1" and No. 2, 4" × 2.75" × 1". Both are very tender on manipulation.   |
| " 10       | ...             | 38.5            | 39.0   | 38.7   | Absent              | 10th.—The swellings are somewhat increased in size, and have become hard and tense, and are exceedingly tender on manipulation.  |
| " 11       | ...             | 36.8            | 38.5   | 38.3   | Nematodes...        | 11th.—The swelling has slightly decreased at the seat of inoculation, and the tenderness is not so marked; conjunctival membranes clear.   |
| " 12       | ...             | 37.8            | 39.3   | 38.4   | Absent              | 12th.—Swelling still further reduced in size. No petechiæ on the conjunctivæ.  |
| " 13       | ...             | 36.7            | 37.6   | 37.5   | "                   | 13th.—Condition unchanged.   |
| " 14       | ...             | 36.0            | 38.1   | 38.5   | "                   | 14th.—The swelling and œdema at the points of inoculation have entirely subsided, but there is a small hard body to be felt in the centre of the patch occupied by the swelling on the 9th instant.  |
| " 15       | ...             | 37.0            | 38.0   | 38.3   | "                   | 15th.—Condition unchanged.   |
| " 16       | ...             | 37.0            | 37.7   | 38.0   | "                   | 16th.—Do.  |
| " 17       | ...             | 37.3            | 38.8   | 38.2   | "                   | 17th.—Do.  |
| " 18       | ...             | 37.4            | 39.3   | 39.0   | "                   | 18th.—Do.  |







RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

Disease, \_\_\_\_\_ Date of \_\_\_\_\_ Result, \_\_\_\_\_ Date of Result, \_\_\_\_\_ Register No. LII Age, \_\_\_\_\_ Sex, \_\_\_\_\_ Colour, \_\_\_\_\_

| Dates of Observation   |                  | Nov 15        | 16            | 17        | 18        | 19        | 20        | 21        | 22        | 23        | 24        | 25        | 26        | 27        | 28        | 29        | 30        | Dec 1     | 2         | 3         | 4         | 5         | 6         | 7         |           |
|------------------------|------------------|---------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Days of Disease        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| Organisms in Blood.    |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| Respiration per minute | Pulse per minute | Temperature F | Temperature C | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. |
|                        |                  | 114           | 45°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 55                     | 120              | 113           | 45°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  | 112           | 44°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 50                     | 110              |               | 44°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  | 111           |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 45                     | 100              | 110           | 43°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  | 109           |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  | 108           | 42°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 40                     | 90               |               | 42°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  | 107           |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 35                     | 80               | 106           | 41°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  | 105           |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 30                     | 70               | 104           | 40°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  | 103           |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 25                     | 60               | 102           | 39°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  | 101           |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 20                     | 50               | 100           | 38°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  | 99            |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 15                     | 40               | 98            | 37°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  | 97            |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 10                     | 30               | 96            | 36°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  | 95            |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 5                      | 20               | 94            | 35°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |



| Date.           | Day of Disease. | Temperature °C. |        |        | Hæmatozoa in Blood. | REMARKS.   |
|-----------------|-----------------|-----------------|--------|--------|---------------------|--|
|                 |                 | A.M.            | 1 P.M. | 5 P.M. |                     |  |
| 1891.           |                 |                 |        |        |                     |  |
| November 19 ... | ...             | 37·2            | 38·7   | 38·6   | Absent ...          | 19th.—Inoculated subcutaneously over the right scapular region with 2·0 c.c. of blood containing hæmatozoa, mixed with ·6 per cent. salt solution, taken from the hearts of several small rats ( <i>Mus decumanus</i> ) immediately after death. |
| „ 20 ...        | ...             | 36·7            | 39·0   | 38·7   | „ ...               | 20th.—There is a raised swelling at the seat of inoculation 4'' × 2·5'' × 1''; conjunctival membranes tinged yellow, but there are no petechiæ.  |
| „ 21 ...        | ...             | 38·4            | 40·1   | 39·7   | „ ...               | 21st.—Condition unchanged.   |
| „ 22 ...        | ...             | 37·5            | 39·5   | 39·2   | „ ...               | 22nd.—Do.  |
| „ 23 ...        | ...             | 36·6            | 38·3   | 37·7   | „ ...               | 23rd.—Do.  |
| „ 24 ...        | ...             | 36·2            | 38·3   | 37·6   | „ ...               | 24th.—The swelling has somewhat increased in size, and is tender on manipulation.  |
| „ 25 ...        | ...             | 37·3            | 38·1   | 38·0   | „ ...               |  |
| „ 26 ...        | ...             | 36·8            | 38·5   | 38·0   | „ ...               |  |
| „ 27 ...        | ...             | 36·8            | 38·0   | 38·2   | „ ...               |  |
| „ 28 ...        | ...             | 37·5            | 38·2   | 38·3   | „ ...               | 28th.—The swelling is somewhat reduced in size, and the tenderness is less marked.   |
| „ 29 ...        | ...             | 37·0            | 38·4   | 38·4   | „ ...               |  |
| „ 30 ..         | ...             | 37·6            | 38·2   | 38·2   | „ ..                | 30th.—Swelling still further reduced in size.  |

This animal's temperature was carefully taken three times, and the blood examined once daily for a further period of fifty-nine days, but no hæmatozoa were observed in the blood; the temperature remaining normal or subnormal. On January 28th, 1892, the animal developed Lymphangitis of one extremity, and was immediately destroyed with the aid of chloroform.

*Remarks—*

The points of interest in this case are—

1st.—The presence of small nematodes in the blood previous to inoculation.

2nd.—That the primary inoculation with rat's blood conducted on the 30th October, should have been followed by considerable swelling and œdema at and around the seats of inoculation, but should have produced so little general disturbance of the system.

3rd.—That three weeks later re-inoculation with blood from a similar source, and at the seat of the former injection, should have produced like changes to those observed after the primary inoculation.

4th.—That the changes observed after re-inoculation were quite as extensive and virulent in character as those which occurred after the primary one.

HORSE No. XLIV.

Dunn country-bred, aged, but in good condition.

| Date.     |    | Temperature °C. |        |        | Hæmatozoa<br>in Blood. | REMARKS.  |
|-----------|----|-----------------|--------|--------|------------------------|---|
|           |    | A. M.           | 1 P.M. | 5 P.M. |                        |   |
| 1891.     |    |                 |        |        |                        |   |
| September | 21 | ...             | ...    | 37·0   | Healthy.               |   |
| "         | 22 | 35·8            | ...    | 37·1   | "                      |   |
| "         | 23 | 36·2            | ...    | 37·2   | "                      |   |
| "         | 24 | 36·1            | ...    | 37·3   | "                      |   |
| "         | 25 | 36·4            | ...    | 37·1   | "                      |   |
| "         | 26 | 36·0            | ...    | 37·2   | "                      |   |
| "         | 27 | 35·6            | ...    | 37·3   | "                      |   |
| "         | 28 | 36·7            | ...    | 37·5   | "                      |   |
| "         | 29 | 35·7            | ...    | 37·3   | "                      |   |
| "         | 30 | 35·6            | ...    | 37·6   | "                      |   |
| October   | 1  | 35·7            | ...    | 37·4   | "                      |   |
| "         | 2  | 35·6            | ...    | 37·3   | "                      | Inoculated subcutaneously over the right scapular region with 1·0 c.c.<br>of blood containing swarms of hæmatozoa, taken from the hearts of<br>rats ( <i>Mus decumanus</i> ) immediately after death. |
| "         | 3  | 35·7            | 37·3   | 37·5   | Absent.                | There is no swelling or œdema at the seat of inoculation.   |
| "         | 4  | 36·2            | 37·4   | 37·4   | "                      | " " "   |



| Date.     | Temperature °C. |        |        | Hæmatozoa<br>in Blood. | REMARKS.   |
|-----------|-----------------|--------|--------|------------------------|--|
|           | A.M.            | 1 P.M. | 5 P.M. |                        |  |
| 1891.     |                 |        |        |                        |  |
| October 5 | 36.1            | 37.2   | 36.8   | Absent ...             | There is no swelling or œdema at the seat of inoculation.  |
| " 6       | 36.3            | 37.6   | 38.0   | "                      | " " "  |
| " 7       | 36.2            | 38.0   | 37.7   | "                      | " " "  |
| " 8       | 36.1            | 38.0   | 37.8   | "                      | There is a small tumour about the size of a walnut hard to the touch at the seat of inoculation ; it is very tender on manipulation. There are two pale red-coloured ecchymoses on the membranes of the right eye.   |
| " 9       | 37.2            | 38.7   | 38.0   | "                      | Condition unchanged.   |
| " 10      | 36.1            | 38.5   | 37.7   | "                      | " "  |
| " 11      | 36.6            | 38.7   | 39.4   | "                      | " "  |
| " 12      | 39.1            | 39.8   | 38.4   | "                      | " "  |
| " 13      | 36.2            | 38.0   | 39.1   | "                      | " "  |
| " 14      | 36.0            | 37.1   | 37.3   | "                      | There are two pale-coloured ecchymoses involving the conjunctiva of the right eye. The tumour at the seat of inoculation has decreased during the night, and if any hæmatozoa are to be found in the blood as the result of the inoculation with rat's blood, they ought to be discovered on microscopical examination this morning.   |
| " 15      | 37.0            | 38.1   | 37.5   | "                      | The general condition of the animal is unchanged.  |
| " 16      | 35.7            | 38.2   | 39.4   | "                      | There is a little thickening under the skin in the subcutaneous tissue at the seat of inoculation, and there are many ecchymoses on the conjunctivæ.   |
| " 17      | 36.4            | 37.3   | 38.0   | "                      | Condition unchanged.   |
| " 18      | 35.5            | 37.7   | 38.0   | "                      | " "  |
| " 19      | 38.3            | 38.8   | 38.6   | "                      | " "  |
| " 20      | 37.8            | 38.3   | 38.5   | "                      | The animal is weak ; there is some swelling and œdema of the hind legs and sheath, and several fresh ecchymoses involving the left membrana nictitans.   |
| " 21      | 36.2            | 38.1   | 38.4   | "                      | Condition unchanged.   |
| " 22      | 36.1            | 37.3   | 38.4   | "                      | " "  |
| " 23      | 36.8            | 37.7   | 37.8   | "                      | " "  |
| " 24      | 36.8            | 37.4   | 38.2   | "                      | There are several ecchymoses on the right conjunctiva.   |
| " 25      | 36.0            | 37.3   | 37.4   | "                      | Condition unchanged.   |
| " 26      | 36.6            | 37.8   | 38.0   | "                      | " "  |
| " 27      | 36.3            | 37.7   | 37.8   | "                      | The ecchymoses are extensive on the right conjunctiva.   |
| " 28      | 36.4            | 37.8   | 38.0   | "                      | Condition unchanged.   |
| " 29      | 36.7            | 37.5   | 37.5   | "                      | The swelling and œdema has extended forward along the abdomen, and has now appeared between the fore-limbs.  |
| " 30      | 36.3            | 37.4   | 38.2   | "                      | Condition unchanged. This animal's temperature was carefully taken three times, and the blood examined once daily for a further period of twenty-eight days, but no hæmatozoa were observed in the blood, the temperature remaining normal or sub-normal. On the 27th November, the animal became much weaker although the appetite continued ravenous. Fell at 12-30 P.M. Death occurred at 4-15 P.M. |

*Autopsy.*—45 minutes after death. Body emaciated.

*Thorax.*—There is no fluid in the pleural cavities, and there are no adhesions of the pleuræ.

*Lungs.*—The apices and anterior portions of the organs for a distance of six inches are consolidated, and dark-red in colour ; the remaining portion of each lung is free from disease, and fully distended with air.

*Heart.*—Weights 4 lbs. 1 oz. Externally the base is the seat of a considerable amount of sherry-coloured exudation, but internally the organ presents a healthy appearance.

*Liver.*—Weights 5 lbs. 10 ozs. and is small, presents no pathological changes.

*Spleen.*—Weights 1 lb. 10 ozs., small, firm, numerous small circular patches on the capsule.

*Stomach.*—Distended. *On section* contains a large amount of semi-digested food. The *cuticular* portion of the organ is healthy in appearance ; the *villous* portion presents a spiroptera tumour, the size of a large walnut.

*Kidneys.*—Right weighs 1 lb., Left, 13 ozs. The capsules strip easily, and the organs present a healthy appearance.

*Remarks.*—This animal was inoculated subcutaneously on 2nd October 1891 with 1.0 c.c. of blood, hæmatozoa swarming, taken from the heart of a rat (*Mus decumanus*) immediately after death. Six days later, there was a small tumour, the size of a walnut, at the seat of inoculation, and a few petechiæ on the conjunctival membrane of the right eye. Eight days later, the tumour had disappeared, and by the 18th day there was some swelling and œdema of the extremities and sheath, which later extended forward between the fore-limbs. The animal continued in this condition for more than three weeks, when it succumbed. The chief point of interest at the autopsy was the bi-lateral and symmetrical circumscribed patches of consolidation situated at the anterior portions of both lungs, for similar patches have been described in other cases after successful inoculation.

















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B.

RAT SURRA

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APPENDIX IV.

SUBCUTANEOUS INOCULATION AND RE-INOCULATION AT A LATER PERIOD WITH  
SOILED RAT'S BLOOD WITH NEGATIVE RESULTS; FURTHER INOCULATION OF  
THE SAME ANIMAL WITH SOILED HORSE SURRA BLOOD. RESULTS POSITIVE

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(A) DIRECTLY INTO THE JUGULAR VEIN—  
HORSE No. XIII.

(B) SUBCUTANEOUSLY—  
HORSES Nos. XII, XLVIII, XLVI, LVIII.

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Colour,

III

*Record of Organisms  
in Blood.*

For  
500

Pulse...  
Respiration...





RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

|                         |  |         |  |         |  |      |  |      |  |                 |  |                    |  |         |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |        |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  | 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| Disease,                |  | Date of |  | Result, |  | Age, |  | Sex, |  | Date of Result, |  | Register No. XIII. |  | Colour, |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |        |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  | 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|      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  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| Dates of Observation.   |  | May 17  |  | 18      |  | 19   |  | 20   |  | 21              |  | 22                 |  | 23      |  | 24  |  | 25  |  | 26  |  | 27  |  | 28  |  | 29  |  | 30  |  | 31  |  | June 1 |  | 2  |  | 3  |  | 4  |  | 5  |  | 6  |  | 7  |  | 8  |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  | 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|      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  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| Days of Disease         |  | 12      |  | 13      |  | 14   |  | 15   |  | 16              |  | 17                 |  | 18      |  | 19  |  | 20  |  | 21  |  | 22  |  | 23  |  | 24  |  | 25  |  | 26  |  | 27     |  | 28 |  | 29 |  | 30 |  | 31 |  | 32 |  | 33 |  | 34 |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  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| Organisms in Blood.     |  | N       |  | N       |  | N    |  | N    |  | N               |  | N                  |  | —       |  | —   |  | —   |  | F   |  | F   |  | N   |  | N   |  | N   |  | VN  |  | VN     |  | —  |  | —  |  | F  |  | N  |  | N  |  | N  |  | F  |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  | 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| Respiration per minute. |  | 114     |  | 113     |  | 112  |  | 111  |  | 110             |  | 109                |  | 108     |  | 107 |  | 106 |  | 105 |  | 104 |  | 103 |  | 102 |  | 101 |  | 100 |  | 99     |  | 98 |  | 97 |  | 96 |  | 95 |  | 94 |  | 93 |  | 92 |  | 91 |  | 90 |  | 89 |  | 88 |  | 87 |  | 86 |  | 85 |  | 84 |  | 83 |  | 82 |  | 81 |  | 80 |  | 79 |  | 78 |  | 77 |  | 76 |  | 75 |  | 74 |  | 73 |  | 72 |  | 71 |  | 70 |  | 69 |  | 68 |  | 67 |  | 66 |  | 65 |  | 64 |  | 63 |  | 62 |  | 61 |  | 60 |  | 59 |  | 58 |  | 57 |  | 56 |  | 55 |  | 54 |  | 53 |  | 52 |  | 51 |  | 50 |  | 49 |  | 48 |  | 47 |  | 46 |  | 45 |  | 44 |  | 43 |  | 42 |  | 41 |  | 40 |  | 39 |  | 38 |  | 37 |  | 36 |  | 35 |  | 34 |  | 33 |  | 32 |  | 31 |  | 30 |  | 29 |  | 28 |  | 27 |  | 26 |  | 25 |  | 24 |  | 23 |  | 22 |  | 21 |  | 20 |  | 19 |  | 18 |  | 17 |  | 16 |  | 15 |  | 14 |  | 13 |  | 12 |  | 11 |  | 10 |  | 9 |  | 8 |  | 7 |  | 6 |  | 5 |  | 4 |  | 3 |  | 2 |  | 1 |  | 0 |  | -1 |  | -2 |  | -3 |  | -4 |  | -5 |  | -6 |  | -7 |  | -8 |  | -9 |  | -10 |  | -11 |  | -12 |  | -13 |  | -14 |  | -15 |  | -16 |  | -17 |  | -18 |  | -19 |  | -20 |  | -21 |  | -22 |  | -23 |  | -24 |  | -25 |  | -26 |  | -27 |  | -28 |  | -29 |  | -30 |  | -31 |  | -32 |  | -33 |  | -34 |  | -35 |  | -36 |  | -37 |  | -38 |  | -39 |  | -40 |  | -41 |  | -42 |  | -43 |  | -44 |  | -45 |  | -46 |  | -47 |  | -48 |  | -49 |  | -50 |  | -51 |  | -52 |  | -53 |  | -54 |  | -55 |  | -56 |  | -57 |  | -58 |  | -59 |  | -60 |  | -61 |  | -62 |  | -63 |  | -64 |  | -65 |  | -66 |  | -67 |  | -68 |  | -69 |  | -70 |  | -71 |  | -72 |  | -73 |  | -74 |  | -75 |  | -76 |  | -77 |  | -78 |  | -79 |  | -80 |  | -81 |  | -82 |  | -83 |  | -84 |  | -85 |  | -86 |  | -87 |  | -88 |  | -89 |  | -90 |  | -91 |  | -92 |  | -93 |  | -94 |  | -95 |  | -96 |  | -97 |  | -98 |  | -99 |  | -100 |  | -101 |  | -102 |  | -103 |  | -104 |  | -105 |  | -106 |  | -107 |  | -108 |  | -109 |  | -110 |  | -111 |  | -112 |  | -113 |  | -114 |  | -115 |  | -116 |  | -117 |  | -118 |  | -119 |  | -120 |  | -121 |  | -122 |  | -123 |  | -124 |  | -125 |  | -126 |  | -127 |  | -128 |  | -129 |  | -130 |  | -131 |  | -132 |  | -133 |  | -134 |  | -135 |  | -136 |  | -137 |  | -138 |  | -139 |  | -140 |  | -141 |  | -142 |  | -143 |  | -144 |  | -145 |  | -146 |  | -147 |  | -148 |  | -149 |  | -150 |  | -151 |  | -152 |  | -153 |  | -154 |  | -155 |  | -156 |  | -157 |  | -158 |  | -159 |  | -160 |  | -161 |  | -162 |  | -163 |  | -164 |  | -165 |  | -166 |  | -167 |  | -168 |  | -169 |  | -170 |  | -171 |  | -172 |  | -173 |  | -174 |  | -175 |  | -176 |  | -177 |  | -178 |  | -179 |  | -180 |  | -181 |  | -182 |  | -183 |  | -184 |  | -185 |  | -186 |  | -187 |  | -188 |  | -189 |  | -190 |  | -191 |  | -192 |  | -193 |  | -194 |  | -195 |  | -196 |  | -197 |  | -198 |  | -199 |  | -200 |  | -201 |  | -202 |  | -203 |  | -204 |  | -205 |  | -206 |  | -207 |  | -208 |  | -209 |  | -210 |  | -211 |  | -212 |  | -213 |  | -214 |  | -215 |  | -216 |  | -217 |  | -218 |  | -219 |  | -220 |  | -221 |  | -222 |  | -223 |  | -224 |  | -225 |  | -226 |  | -227 |  | -228 |  | -229 |  | -230 |  | -231 |  | -232 |  | -233 |  | -234 |  | -235 |  | -236 |  | -237 |  | -238 |  | -239 |  | -240 |  | -241 |  | -242 |  | -243 |  | -244 |  | -245 |  | -246 |  | -247 |  | -248 |  | -249 |  | -250 |  | -251 |  | -252 |  | -253 |  | -254 |  | -255 |  | -256 |  | -257 |  | -258 |  | -259 |  | -260 |  | -261 |  | -262 |  | -263 |  | -264 |  | -265 |  | -266 |  | -267 |  | -268 |  | -269 |  | -270 |  | -271 |  | -272 |  | -273 |  | -274 |  | -275 |  | -276 |  | -277 |  | -278 |  | -279 |  | -280 |  | -281 |  | -282 |  | -283 |  | -284 |  | -285 |  | -286 |  | -287 |  | -288 |  | -289 |  | -290 |  | -291 |  | -292 |  | -293 |  | -294 |  | -295 |  | -296 |  | -297 |  | -298 |  | -299 |  | -300 |  | -301 |  | -302 |  | -303 |  | -304 |  | -305 |  | -306 |  | -307 |  | -308 |  | -309 |  | -310 |  | -311 |  | -312 |  | -313 |  | -314 |  | -315 |  | -316 |  | -317 |  | -318 |  | -319 |  | -320 |  | -321 |  | -322 |  | -323 |  | -324 |  | -325 |  | -326 |  | -327 |  | -328 |  | -329 |  | -330 |  | -331 |  | -332 |  | -333 |  | -334 |  | -335 |  | -336 |  | -337 |  | -338 |  | -339 |  | -340 |  | -341 |  | -342 |  | -343 |  | -344 |  | -345 |  | -346 |  | -347 |  | -348 |  | -349 |  | -350 |  | -351 |  | -352 |  | -353 |  | -354 |  | -355 |  | -356 |  | -357 |  | -358 |  | -359 |  | -360 |  | -361 |  | -362 |  | -363 |  | -364 |  | -365 |  | -366 |  | -367 |  | -368 |  | -369 |  | -370 |  | -371 |  | -372 |  | -373 |  | -374 |  | -375 |  | -376 |  | -377 |  | -378 |  | -379 |  | -380 |  | -381 |  | -382 |  | -383 |  | -384 |  | -385 |  | -386 |  | -387 |  | -388 |  | -389 |  | -390 |  | -391 |  | -392 |  | -393 |  | -394 |  | -395 |  | -396 |  | -397 |  | -398 |  | -399 |  | -400 |  | -401 |  | -402 |  | -403 |  | -404 |  | -405 |  | -406 |  | -407 |  | -408 |  | -409 |  | -410 |  | -411 |  | -412 |  | -413 |  | -414 |  | -415 |  | -416 |  | -417 |  | -418 |  | -419 |  | -420 |  | -421 |  | -422 |  | -423 |  | -424 |  | -425 |  | -426 |  | -427 |  | -428 |  | -429 |  | -430 |  | -431 |  | -432 |  | -433 |  | -434 |  | -435 |  | -436 |  | -437 |  | -438 |  | -439 |  | -440 |  | -441 |  | -442 |  | -443 |  | -444 |  | -445 |  | -446 |  | -447 |  | -448 |  | -449 |  | -450 |  | -451 |  | -452 |  | -453 |  | -454 |  | -455 |  | -456 |  | -457 |  | -458 |  | -459 |  | -460 |  | -461 |  | -462 |  | -463 |  | -464 |  | -465 |  | -466 |  | -467 |  | -468 |  | -469 |  | -470 |  | -471 |  | -472 |  | -473 |  | -474 |  | -475 |  | -476 |  | -477 |  | -478 |  | -479 |  | -480 |  | -481 |  | -482 |  | -483 |  | -484 |  | -485 |  | -486 |  | -487 |  | -488 |  | -489 |  | -490 |  | -491 |  | -492 |  | -493 |  | -494 |  | -495 |  | -496 |  | -497 |  | -498 |  | -499 |  | -500 |  | -501 |  | -502 |  | -503 |  | -504 |  | -505 |  | -506 |  | -507 |  | -508 |  | -509 |  | -510 |  | -511 |  | -512 |  | -513 |  | -514 |  | -515 |  | -516 |  | -517 |  | -518 |  | -519 |  | -520 |  | -521 |  | -522 |  | -523 |  | -524 |  | -525 |  | -526 |  | -527 |  | -528 |  | -529 |  | -530 |  | -531 |  | -532 |  | -533 |  | -534 |  | -535 |  | -536 |  | -537 |  | -538 |  | -539 |  | -540 |  | -541 |  | -542 |  | -543 |  | -544 |  | -545 |  | -546 |  | -547 |  | -548 |  | -549 |  | -550 |  | -551 |  | -552 |  | -553 |  | -554 |  | -555 |  | -556 |  | -557 |  | -558 |  | -559 |  | -560 |  | -561 |  | -562 |  | -563 |  | -564 |  | -565 |  | -566 |  | -567 |  | -568 |  | -569 |  | -570 |  | -571 |  | -572 |  | -573 |  | -574 |  | -575 |  | -576 |  | -577 |  | -578 |  | -579 |  | -580 |  | -581 |  | -582 |  | -583 |  | -584 |  | -585 |  | -586 |  | -587 |  | -588 |  | -589 |  | -590 |  | -591 |  | -592 |  | -593 |  | -594 |  | -595 |  | -596 |  | -597 |  | -598 |  | -599 |  | -600 |  | -601 |  | -602 |  | -603 |  | -604 |  | -605 |  | -606 |  | -607 |  | -608 |  | -609 |  | -610 |  | -611 |  | -612 |  | -613 |  | -614 |  | -615 |  | -616 |  | -617 |  | -618 |  | -619 |  | -620 |  | -621 |  | -622 |  | -623 |  | -624 |  | -625 |  | -626 |  | -627 |  | -628 |  | -629 |  | -630 |  | -631 |  | -632 |  | -633 |  | -634 |  | -635 |  | -636 |  | -637 |  | -638 |  | -639 |  | -640 |  | -641 |  | -642 |  | -643 |  | -644 |  | -645 |  | -646 |  | -647 |  | -648 |  | -649 |  | -650 |  | -651 |  | -652 |  | -653 |  | -654 |  | -655 |  | -656 |  | -657 |  | -658 |  | -659 |  | -660 |  | -661 |  | -662 |  | -663 |  | -664 |  | -665 |  | -666 |  | -667 |  | -668 |  | -669 |  | -670 |  | -671 |  | -672 |  | -673 |  | -674 |  | -675 |  | -676 |  | -677 |  | -678 |  | -679 |  | -680 |  | -681 |  | -682 |  | -683 |  | -684 |  | -685 |  | -686 |  | -687 |  | -688 |  | -689 |  | -690 |  | -691 |  | -692 |  | -693 |  | -694 |  | -695 |  | -696 |  | -697 |  | -698 |  | -699 |  | -700 |  | -701 |  | -702 |  | -703 |  | -704 |  | -705 |  | -706 |  | -707 |  | -708 |  | -709 |  | -710 |  | -711 |  | -712 |  | -713 |  | -714 |  | -715 |  | -716 |  | -717 |  | -718 |  | -719 |  | -720 |  | -721 |  | -722 |  | -723 |  | -724 |  | -725 |  | -726 |  | -727 |  | -728 |  | -729 |  | -730 |  | -731 |  | -732 |  | -733 |  | -734 |  | -735 |  | -736 |  | -737 |  | -738 |  | -739 |  | -740 |  | -741 |  | -742 |  | -743 |  | -744 |  | -745 |  | -746 |  | -747 |  | -748 |  | -749 |  | -750 |  | -751 |  | -752 |  | -753 |  | -754 |  | -755 |  | -756 |  | -757 |  | -758 |  | -759 |  | -760 |  | -761 |  | -762 |  | -763 |  | -764 |  | -765 |  | -766 |  | -767 |  | -768 |  | -769 |  | -770 |  | -771 |  | -772 |  | -773 |  | -774 |  | -775 |  | -776 |  | -777 |  | -778 |  | -779 |  | -780 |  | -781 |  | -782 |  | -783 |  | -784 |  | -785 |  | -786 |  | -787 |  | -788 |  | -789 |  | -790 |  | -791 |  | -792 |  | -793 |  | -794 |  | -795 |  | -796 |  | -797 |  | -798 |  | -799 |  | -800 |  | -801 |  | -802 |  | -803 |  | -804 |  | -805 |  | -806 |  | -807 |  | -808 |  | -809 |  | -810 |  | -811 |  | -812 |  | -813 |  | -814 |  | -815 |  | -816 |  | -817 |  | -818 |  | -819 |  | -820 |  | -821 |  | -822 |  | -823 |  | -824 |  | -825 |  | -826 |  | -827 |  | -828 |  | -829 |  | -830 |  | -831 |  | -832 |  | -833 |  | -834 |  | -835 |  | -836 |  | -837 |  | -838 |  | -839 |  | -840 |  | -841 |  | -842 |  | -843 |  | -844 |  | -845 |  | -846 |  | -847 |  | -848 |  | -849 |  | -850 |  | -851 |  | -852 |  | -853 |  | -854 |  | -855 |  | -856 |  | -857 |  | -858 |  | -859 |  | -860 |  | -861 |  | -862 |  | -863 |  | -864 |  | -865 |  |



Disease, Surra horse.

Date of Inoculation { 22.1.91. Rat  
12.2.91. do. —  
22.4.91. do. —  
11.5.91. do. —

Result, Death

Date of Result, 12.6.21 Register No. XIII

Age: Aged

Sex, Entire

Colour, Bay

## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

| Dates of Observation.   |                  | April 24    |     | 25   |      | 26   |      | 27   |      | 28   |      | 29   |      | 30   |      | May 1 |      | 2    |      | 3    |      | 4    |      | 5    |      | 6    |      | 7    |      | 8    |      | 9    |      | 10   |      | 11   |      | 12   |      | 13   |      | 14   |      | 15 |  | 16 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
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| Days of Disease         |                  |             |     |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      | 1    |      | 2    |      | 3    |      | 4    |      | 5    |      | 6    |      | 7    |      | 8    |      | 9  |  | 10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Organisms in Blood.     |                  |             |     |      |      |      |      |      |      |      |      |      |      |      |      | —     |      | —    |      | —    |      | —    |      | —    |      | —    |      | F    |      | N    |      | VN   |      | VN   |      | N    |      | —    |      | —    |      | N    |      | N  |  | N  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Respiration per minute. | Pulse per minute | Temperature |     | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time  | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |    |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
|                         |                  | F           | C   |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| 55                      | 120              | 114         | 45° | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | </ |

(5.415)

### Hematoxon Curve Temperature . . . . .

Drawn & Litho: Govt. Printing Office, Poona 1895

Pulse. . . . .  
Respiration . . . . .

X Subcutaneously inoculated with 1 cc. of blood containing no thermotaxis taken from the Jugular Vein of Horse No XIX





| Disease, | Date of | Result, | Date of | Register No. |
|----------|---------|---------|---------|--------------|
|          |         |         |         |              |
|          |         |         |         | XIII         |

Colour

| Dates of Observation.         |                        |             | April |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |  |
|-------------------------------|------------------------|-------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|--|
| Days of Disease               |                        |             |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |  |
| Organisms in Blood.           |                        |             |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |  |
| Respiration<br>per<br>minute. | Pulse<br>per<br>minute | Temperature |       | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |   |  |
|                               |                        | F           | C     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |  |
| 55                            | 120                    | 114         | 45°   | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | . |  |
| 50                            | 110                    | 112         | 44°   | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | . |  |
| 45                            | 100                    | 110         | 43°   | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | . |  |
| 40                            | 90                     | 109         | 42°   | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | . |  |
| 35                            | 80                     | 107         | 41°   | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | . |  |
| 30                            | 70                     | 105         | 40°   | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | . |  |
| 25                            | 60                     | 103         | 39°   | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | . |  |
| 20                            | 50                     | 101         | 38°   | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | . |  |
| 15                            | 40                     | 99          | 37°   | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | . |  |
| 10                            | 30                     | 97          | 36°   | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | . |  |
| 5                             | 20                     | 95          | 35°   | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | . |  |
|                               |                        | 94          | 34°   | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | . |  |

Swarming  
over 50 in  
o field of  
microscope

Very  
numerous  
=50

Numerous  
=20

Few  
=5

Absent

Record of Organisms  
in Blood.





RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Disease \_\_\_\_\_ Date of \_\_\_\_\_ Result \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_ Colour \_\_\_\_\_

| Dates of Observation.  |                  | March         | 9             | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31  | Record of Organisms in Blood |
|------------------------|------------------|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|------------------------------|
| Days of Disease        |                  |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |                              |
| Respiration per minute | Pulse per minute | Temperature F | Temperature C | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time                                      |                              |
|                        |                  |               |               | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M.                                      | A.M.                         |
| 55                     | 120              | 114           | 45°           | 8    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Swarming over 50 in a field of microscope |                              |
| 50                     | 110              | 112           | 44°           | 8    | 6    | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Very numerous = 50                        |                              |
| 45                     | 100              | 110           | 43°           | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Numerous = 20                             |                              |
| 40                     | 90               | 108           | 42°           | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Few = 5                                   |                              |
| 35                     | 80               | 107           | 41°           | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Absent                                    |                              |
| 30                     | 70               | 106           | 40°           | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |                              |
| 25                     | 60               | 105           | 39°           | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |                              |
| 20                     | 50               | 103           | 38°           | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |                              |
| 15                     | 40               | 101           | 37°           | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |                              |
| 10                     | 30               | 100           | 36°           | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |                              |
| 5                      | 20               | 98            | 35°           | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |                              |
|                        |                  | 94            | 34°           | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |                              |

Homotaxon curve  
Temperature  
Drawn with the Gal. Photometer Office 1893.



Date of \_\_\_\_\_

### Result:

Date of Result \_\_\_\_\_

Register No.

Age

Sex

Colour

Absent

*Record of Organisms  
in Blood.*

Swarming  
over 50 in  
a field of  
microscope

Very  
numerous  
= 50

Numerous  
- 20

Few  
= 5

Hematocrit curve  
Temperature . . .

Drawn & Litho: GUY. Photozinc: Office Poona 1893.





RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Country bred \_\_\_\_\_ Age, Aged \_\_\_\_\_ Sex, Entire \_\_\_\_\_ Colour Bay \_\_\_\_\_

Disease "Surra" Horse \_\_\_\_\_ Date of Inoc. { 22.1.91 Rat blood 12.2.91 do. 29.4.91 Horse blood } Result Death \_\_\_\_\_ Date of Result 12.6.91 \_\_\_\_\_ Register No. XIII. \_\_\_\_\_

| Dates of Observation.  |                  | Jan'y       | 22 | 23 | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | Febr'y | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13 |
|------------------------|------------------|-------------|----|----|------|------|------|------|------|------|------|------|--------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| Days of Disease        |                  |             |    |    |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
| Organisms in Blood     |                  |             |    |    |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
| Respiration per minute | Pulse per minute | Temperature | F  | C  | Time | Time | Time | Time | Time | Time | Time | Time | Time   | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |    |
|                        |                  |             |    |    |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 114         | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 35                     | 120              | 113         | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 112         | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 50                     | 110              | 111         | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 110         | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 45                     | 100              | 109         | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 108         | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 40                     | 90               | 107         | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 106         | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 35                     | 80               | 105         | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 104         | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 30                     | 70               | 103         | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 102         | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 25                     | 60               | 101         | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 100         | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 20                     | 50               | 99          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 98          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 15                     | 40               | 97          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 96          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 10                     | 30               | 95          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 94          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 5                      | 20               | 93          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 92          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 91          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 90          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 89          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 88          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 87          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 86          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 85          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 84          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 83          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 82          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 81          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 80          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 79          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 78          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 77          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 76          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 75          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 74          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 73          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 72          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 71          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 70          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 69          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 68          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 67          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 66          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 65          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 64          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 63          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 62          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 61          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 60          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 59          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 58          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 57          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 56          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 55          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 54          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 53          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 52          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 51          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 50          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 49          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 48          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 47          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 46          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 45          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 44          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 43          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 42          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 41          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 40          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 39          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 38          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 37          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 36          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 35          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 34          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 33          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 32          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 31          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 30          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 29          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 28          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 27          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 26          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 25          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 24          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 23          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 22          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 21          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 20          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 19          | —  | 8  | 6    | 4    | 2    |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |
|                        |                  | 18          |    |    |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |    |

Record of Organisms in Blood.

Swarming over 50 in a field of microscope

Very numerous = 50

Numerous = 20

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Haematocrit curve  
Temperature.....  
Dunn & Lingo Govt. Hygienic Office Form 1893.

x Injected directly into the jugular vein 0.6 cc of blood containing numerous haematocrit taken from the heart of a Rat (mus decumanus) immediately after death.  
x Re-inoculated with 1.0 cc of blood containing numerous haematocrit obtained from a similar source.

## HORSE No. XIII.

Direct inoculation into jugular vein of rat's blood containing the hæmatozoon, followed in twenty-one days by re-inoculation subcutaneously. Results negative.

Seventy-six days after second injection, inoculation with Horse-Surra blood. Period of incubation 8 days. Death on the 36th day of disease.

A Bay, entire pony, lame, but strong and in good health.

January 22nd, 1891.—At 3 P.M. 0·6 c.c. of blood containing numerous hæmatozoa, taken from the heart of a rat (*Mus decumanus*) was injected directly into the jugular vein.

February 12th, 1891.—As no signs of the Infusorian had been discovered in the blood up to date, the animal was subjected to re-inoculation, and for this purpose 1·0 c.c. of blood containing numerous hæmatozoa, and from a similar source to the former, was subcutaneously injected over the right scapular region. The usual symptoms followed at the seat of inoculation; the tumour on the 24th measured 1·5" × 1" and a clear straw-coloured fluid exuded from it, but no hæmatozoa were discovered either in this fluid or in the blood. At a later date, the swelling subsided and finally disappeared.

As up to the 29th April, seventy-six days after the last operation, no symptoms of disease had been induced with rat's blood containing the Infusorian, it was determined to inoculate with Horse-Surra blood, in order to test whether the animal had acquired any immunity from the previous injections. Consequently, at 9 A.M., the animal was subcutaneously inoculated with 1·0 c.c. of blood in which no hæmatozoa were discovered, it having been drawn during an intermission.

5th May.—A circular raised swelling was observed at the seat of inoculation 1·5" in diameter, involving the skin and subcutaneous tissues only.

6th.—The swelling had increased in size and was tense and tender on manipulation.

7th.—The swelling had lost the tension and tenderness, and felt soft and doughy under the fingers. The hæmatozoa were found to be few in the blood, but active and well developed.

8th.—Temperature A.M. 37·6°C. P.M. 39·7°C. Hæmatozoa numerous.

9th.—" " 39·4°C. " 40·3°C. " very numerous.

10th.—Urticarial eruption over the posterior and inner sides of the thighs and the near shoulder. This faded in the evening.

Temperature A.M. 39·9°C. Hæmatozoa very numerous. Temperature 5 P.M. 39·4°C.

11th.—Temp. A.M. 39°C. Hæmatozoa numerous. Temp. 5 P.M. 40·5°C.

12th.—Swelling at seat of inoculation now measures  $\frac{1}{2}$ " in diameter. Temperature A.M. 40·0°C, P.M. 40·3°C. Hæmatozoa absent.

13th.—Temperature A.M. 40·1°C. P.M. 38·8°C. Hæmatozoa absent.

14th.—" " 38·5°C. " 40·1°C. " numerous.

15th.—" " 39·7°C. " 39·4°C. " numerous.

16th.—Some œdema of the under-surface of the abdomen.

Temp. A.M. 38·9°C. P.M. 38·6°C. Hæmatozoa numerous.

17th.—Temp. A.M. 38·2°C. " 39·7°C. " "

18th.—" 39·8°C. " 39·9°C. " "

19th.—" 37·8°C. " 39·4°C. " "

20th.—" 39·0°C. " 39·2°C. " "

21st.—Urticarial eruption involving the neck, fore-limbs, shoulders, and abdomen only. Slight clear discharge from right nostril, and lachrymation. Temperature A.M. 38·5°C. P.M. 39·5°C. Hæmatozoa numerous.

22nd.—Eruption gradually fading, appetite impaired. Temperature A.M. 39·3°C. P.M. 39·6°C. Hæmatozoa numerous.

23rd.—Animal dull, urticarial eruption more marked; appetite remains poor. Temperature A.M. 39·5°C. P.M. 39·6°C. Hæmatozoa absent.

24th.—Temperature A.M. 38·0°C. P.M. 38·9°C. Hæmatozoa absent.

25th.—A muco-purulent discharge from both nostrils.

Temp. A.M. 38·5°C. P.M. 38·9°C. Hæmatozoa absent.

26th.—" 38·7°C. " 39·7°C. " few.

27th.—" 39·5°C. " 39·2°C. " few.

28th.—" 38·3°C. " 39·3°C. " few.

29th.—" 38·5°C. " 39·3°C. " numerous.

30th.—" 39·2°C. " 39·4°C. " numerous.

31st.—œdema under abdomen has increased in extent.

Temp. A.M. 38·8°C. P.M. 39·6°C. Hæmatozoa numerous.

1st June.—" 39·1°C. " 38·1°C. " very numerous.

2nd.—" 37·3°C. " 38·7°C. " absent.

3rd.—" 38·2°C. " 38·5°C. " "

4th.—" 38·1°C. " 38·6°C. " few

5th.—Left sub-maxillary gland considerably enlarged and hard; it occupies half the space between the rami, but is not tender on manipulation. Temperature A.M. 39·1°C. P.M. 40·4°C. Hæmatozoa numerous.

6th.—There is a considerable muco-purulent discharge from the right nostril.

Temperature A.M. 39·9°C. P.M. 39·6°C. Hæmatozoa numerous.



7th June.—The muco-purulent discharge has stopped and a clear fluid now drops. Left sub-maxillary gland reduced in size.

|        | Temperature | A.M.    | 39.2°C. | P.M.    | 39.6°C. | Hæmatozoa      | numerous. |
|--------|-------------|---------|---------|---------|---------|----------------|-----------|
| 8th.—  | „           | 39.3°C. | „       | 39.3°C. | „       | few            |           |
| 9th.—  | „           | 36.7°C. | „       | 38.4°C. | „       | absent.        |           |
| 10th.— | „           | 37.4°C. | „       | 37.3°C. | „       | very numerous. |           |
| 11th.— | „           | 36.9°C. | „       | 36.6°C. | „       | swarming.      |           |

At 6.45 P.M., the animal became much weaker, and death took place at 4 A.M. on the 12th instant.

Autopsy.—At 10 A.M., 6 hours *post mortem*.

Body fairly nourished; considerable œdema of the most dependent part of the abdominal walls. No pleuritic adhesions.

Lungs.—Light pink in colour. The apices are the seat of emphysema, as also the free edges of the middle lobes. On section, the tissues are a peculiar orange colour, and on pressure a considerable amount of frothy mucus exudes from the cut surfaces.

The pericardial sac contains a few ounces of a deep yellow-coloured fluid.

Heart.—Weight 4 lbs. 3 ozs. There are a few small circular ecchymoses at the base, lying under the visceral pericardium. On section, there are no sub-endocardial extravasations in any of the cavities; the valves are healthy. The left ventricular walls are hypertrophied.

Liver.—Large, but healthy. On section, much fluid blood exudes from the cut surfaces.

Kidneys.—Right weighs 14.5 ozs. Left 13.5 ozs. The capsules strip easily; the organs are pale, but healthy.

Spleen.—Weight 1 lb. 15 ozs. Firm, and presents a few small petechiæ on its surfaces.

Stomach.—On section, there is a bright yellow line between *cuticular* and *villous* portions, but otherwise the only abnormal feature was the presence of a few reddish coloured patches on the mucous surface of the villous portion. No ecchymoses or parasites.

Intestines.—Healthy.

## HORSE No. XII.

Subcutaneous inoculation on two occasions with soiled rat's blood; results negative. Fifty-two days after the second injection, inoculation with one minim of soiled Horse-Surra blood. Period of incubation six days. Death on the 15th day of disease.

Bay, country-bred gelding, aged, in fair condition, and healthy.

21st January 1891.—The animal was inoculated subcutaneously on each side of the neck with 1.0 c.c. of blood, taken from the hearts of two rats (*Mus decumanus*) immediately after death; the injected blood contained numerous hæmatozoa. Temperature 2.30 P.M. 36.9°C. 5 P.M. 37.2°C.

22nd.—There is slight swelling at the seat of the inoculation; appetite good, evacuations normal.

Temperature A.M. 36.8°C. No hæmatozoa observed. Temperature P.M. 37.6°C.

23rd.—The swelling and œdema have increased at the seat of the inoculation, and the part is hot to the touch. Temperature A.M. 37.3°C. No hæmatozoa observed. Temperature P.M. 38.1°C.

24th.—The swelling and œdema have increased since yesterday, and the tumour is tense and tender on manipulation. Appetite good; visible mucous membranes normal, evacuations natural. Temperature A.M. 37.7°C. No hæmatozoa observed. Temperature P.M. 38°C.

25th.—Condition unchanged. Temperature A.M. 37.5°C. No hæmatozoa discovered. Temperature P.M. 38°C.

26th.—The swelling remains the same size as on the 24th. Temperature A.M. 38°C. No hæmatozoa observed. Temperature P.M. 38.5°C.

From the 27th January to February 11th, the animal appeared in good health, the temperature remained normal as seen in the chart, and no organisms were discovered in the blood. On the 12th the animal was re-inoculated subcutaneously over the right scapular region, with 2.0 c.c. of rat's (*Mus decumanus*) blood containing very numerous hæmatozoa. The rat from which this blood was taken had an enlarged spleen, and on section of the stomach, some petechiæ were observed near the pylorus. The horse's allowance of corn to be discontinued. Temperature A.M. 37.6°C. P.M. 37.8°C.

13th February 1891.—There is considerable swelling and œdema at the seat of yesterday's inoculation. Temperature A.M. 37.5°C. No hæmatozoa observed. Temperature P.M. 37.8°C.

14th.—The swelling and œdema at the seat of the inoculation have become more extended. The animal appears healthy. Temperature A.M. 37.3°C. No hæmatozoa observed. Temperature P.M. 37.6°C.

15th.—Swelling and œdema still extending; appetite good. Temperature A.M. 37.2°C. No hæmatozoa observed. Temperature P.M. 37.5°C.

16th.—Swelling and œdema stationary. Temperature A.M. 37.7°C. No hæmatozoa observed. Temperature P.M. 37.6°C.

On the 20th February petechiæ appeared at the inner canthus of both eyes, especially the left, while on the 22nd they were to be seen chiefly on the membranes of the right eye. On the 22nd they were well marked in both eyes, also on the septum of the left nostril, and on March 1st, extensive petechiæ appeared at the upper and inner border of the right cornea, lying on the sclerotic coat under the conjunctiva.

From the 2nd March to the 5th April the animal appeared in good health, the temperature continued normal, and no hæmatozoa were observed in the blood.

In consequence of no symptoms having supervened since the inoculation with rat's blood, the horse was this morning, 5th April, inoculated on the muzzle, with one minim of blood containing numerous hæmatozoa taken from Horse No. XIX.

RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Country-bred  
Disease, Surra

Age, Aged  
Sex, Gelding  
Colour Bay

Result, Death  
Date of Result, 26.4.91  
Register No. XII

Date of inoculation  
Ref blood 21.1.91  
blood 12.2.91  
Horse blood 5.4.91

| Dates of Observation         |                        | Jan'y<br>21      | 22               | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | Feb'y<br>1 | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   |
|------------------------------|------------------------|------------------|------------------|------|------|------|------|------|------|------|------|------|------------|------|------|------|------|------|------|------|------|------|------|------|
| Days of Disease              |                        |                  |                  |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
| Organisms in Blood           |                        |                  |                  |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
| Respiration<br>per<br>minute | Pulse<br>per<br>minute | Temperature<br>F | Temperature<br>C | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time       | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |
| 55                           | 80                     | 104              | 40               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
| 50                           | 110                    | 113              | 45               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
| 45                           | 100                    | 111              | 42               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
| 40                           | 90                     | 110              | 43               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
| 35                           | 80                     | 108              | 42               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
| 30                           | 70                     | 107              | 41               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
| 25                           | 60                     | 106              | 42               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
| 20                           | 50                     | 105              | 41               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
| 15                           | 40                     | 104              | 40               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
| 10                           | 30                     | 103              | 39               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
| 5                            | 20                     | 102              | 38               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        | 101              | 37               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        | 100              | 36               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        | 99               | 35               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        | 98               | 34               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        | 97               | 33               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        | 96               | 32               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        | 95               | 31               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        | 94               | 30               |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |      |      |      |      |      |      |

Drawn & Litho Sent. Photomicro. Office Poona 1893  
Inoculated subcutaneously with 2 Ccc of blood taken from the heart of a Rat (Mus decumanus)  
Re-inoculated

Hamman's curve  
Temperature





Sex, Gelding. \_\_\_\_\_ Colour, Bay.

Colour, Bay.

Sex, Gelding.

Age.

1870

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Register No. XIII.

Date of Result -

### Result

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Disease

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Page No. 1408

Deanna B. Lakin Sav. Photographs: Office Poore 1893



RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Disease \_\_\_\_\_ Age \_\_\_\_\_ Sex, Gelding \_\_\_\_\_ Colour, Bay. \_\_\_\_\_  
Date of \_\_\_\_\_ Result \_\_\_\_\_ Date of Result \_\_\_\_\_ Register No. XII.

| Dates of Observation.  |                  | March 8       | 9             | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   |    |
|------------------------|------------------|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| Days of Disease        |                  |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| Organisms in Blood     |                  |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| Respiration per minute | Pulse per minute | Temperature F | Temperature C | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |    |
|                        |                  |               |               | AM   | PM   | AM   | PM   | AM   | PM   | AM   | PM   | AM   | PM   | AM   | PM   | AM   | PM   | AM   | PM   | AM   | PM   | AM   | PM   | AM   | PM |
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(5-415)

Hamatozon curve \_\_\_\_\_  
Temperature ...

Drawn & Lined Govt. Hydrozina: Office Panna 1893











## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Age \_\_\_\_\_ Sex, Gelding \_\_\_\_\_ Colour, Bay.

Sex, Gelding

Colour, Bay.

Register No. — XII.

Date of Result:

Reserv.

Date of

Disease

| Dates of Observation |  | Temperature |   | Pulse      | Respiration | Organisms in Blood. |  | April 23 | 24   | 25   | 26   | Time |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Record of Organisms in Blood. | Swarming over 50 in a field of microscope | Very numerous = 50 | Numerous = 20 | Few = 5 | Absent |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     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(5 + 5)

Haematozoan curve . . . .

Temperature . . . .

Drawn & Litho: Govt. Photodur. Co.: Office Poona 1893





6th April 1891.—There is a small blood clot at the inner canthus of the left eye due to a rupture of one of the vessels of the conjunctiva. Temperature A.M. 38.3°C. No hæmatozoa observed. Temperature P.M. 38.4°C.

From the 7th to the 9th there was no change in condition.

10th.—This morning a small lump about  $\frac{1}{3}$ " in diameter globular in form and hard to the touch, can be felt at the seat of the inoculation. Temperature A.M. 38.2°C. No hæmatozoa observed. Temperature P.M. 38.5°C.

11th.—The swelling at the seat of inoculation on the muzzle has increased in size and is tender on pressure. Temperature A.M. 38.6°C. One hæmatoozon observed in two cover-glass preparations of the blood. Temperature P.M. 38.8°C.

12th.—Temperature A.M. 40.2°C. Hæmatozoa few. Temperature P.M. 40.1°C.

13th.— " 39.8°C. " " " 39.9°C.

14th.—The patient is dull, and is rapidly losing flesh. Temperature A.M. 39.6°C. Hæmatozoa very numerous. Temperature P.M. 39.8°C.

15th.—The tumour on the muzzle, which was large and tense yesterday morning, has now almost entirely disappeared. Temperature A.M. 39.5°C. Hæmatozoa very numerous. Temperature P.M. 39.8°C.

16th.—There is a slight discharge of blood from the right nostril. Temperature A.M. 40.7°C. Hæmatozoa very numerous. Temperature P.M. 40.9°C.

17th.—Temperature A.M. 40.1°C. Hæmatozoa very numerous. Temperature P.M. 40.5°C.

18th.—Temperature A.M. 39.5°C. No hæmatozoa observed. Temperature P.M. 39.6°C.

19th.—All four limbs are œdematous, and the animal is weaker. Temperature A.M. 39.4°C. No hæmatozoa observed. Temperature P.M. 40.1°C.

20th.—Temperature A.M. 39.8°C. No hæmatozoa observed. Temperature P.M. 39.9°C.

21st.—At 7 A.M. there was a slight discharge of blood from both nostrils; the animal was standing with its head down, eating hay placed on the ground, and the hæmorrhage lasted for 6 or 7 minutes. The appetite is very good. Temperature A.M. 37.8°C. Hæmatozoa few. Temperature P.M. 38.1°C.

22nd.—The œdema of the limbs is much less marked this morning owing to the animal having assumed the recumbent position during the night. Temperature A.M. 38.1°C. Hæmatozoa few. Temperature P.M. 39.2°C.

23rd.—Temperature A.M. 39.4°C. Hæmatozoa very numerous. Temperature P.M. 39.7°C.

24th.—There is slight collection of mucus, mixed with blood, at the inner canthus of both eyes, which on examination is found to contain hæmatozoa. Temperature A.M. 40.2°C. Hæmatozoa very numerous. Temperature P.M. 40.1°C.

25th.—Hæmorrhage from the left nostril occurred at 5 A.M. this morning, and lasted for a few minutes. The appetite remains good, and the evacuations are normal. Temperature A.M. 40.3°C. Hæmatozoa numerous. Temperature P.M. 39.8°C.

26th.—In the early morning the animal was unable to rise, and gradually became weaker. Death occurred at 11.30 A.M.

Autopsy.—15 minutes after death.

The animal is considerably emaciated, and the fore and hind limbs are œdematous. There is no fluid in the pleural cavities, and no pleuritic adhesions.

Lungs.—The lungs present a pale and somewhat collapsed appearance, and the superior and inferior surfaces of both organs are dotted over with dark-purple patches varying very much in size, from that of a pea to 1" in length and  $\frac{1}{2}$ " in width. These extravasations are lying under the visceral pleura, and on section, are found to dip down and invade the lung-tissue to the extent of  $\frac{1}{4}$ " to  $\frac{1}{3}$ ". These patches are seen dotted over the cut surfaces of the organ, and are lying some distance apart. The major part of the section presents a mottled yellowish pink colour. Besides the condition already described, one notices, on passing the fingers over the surface of the organ, numerous small elevations which are hard and gritty to the touch, and on taking up a portion of the lung between the fingers, others are felt imbedded deeper in the structures. These hard bodies are found to be small concretions, which in some cases are readily enucleated, and contain a yellowish-coloured soft material like paint.

The pericardium contains several ounces of a saffron coloured fluid.

Heart.—Weighs 3 lbs. 2½ ozs. Nothing abnormal is noticed on the pericardial surface. On section, the valves are normal, and there are no sub-endocardial extravasations.

Liver.—Is somewhat enlarged. There is some perihepatitis involving the left lobe, and the right lobe presents a slight opalescence of Glisson's capsule. On the surface of the organ are seen, dotted about, round spots, whitish in colour, which on section are found to invade the gland substance.

Spleen.—Weight 2 lbs. 11½ ozs., fairly firm to the touch. The surface of the organ presents several small petechiæ irregular in outline, and of a brownish red colour.

Stomach.—On palpitation, one can feel a somewhat large mass involving the coats of the under-surface of the organ, some three inches from the pylorus. On section, the organ contains a certain amount of semi-digested green food mixed with undigested gram and corn. A tumour is noticed lying midway between the cuticular portion and the pyloric orifice, the left side of which reaches the edge of the limiting membrane. The tumour is almost circular in shape, 4" in diameter and 1½" at its greatest thickness in the centre, and 1¼" in thickness at the circumference. The mucous membrane covering the tumour is of a pinkish red colour, considerably thickened, and presents a puckered appearance with a depression in the centre. On section, the tumour presents a cavity lined by a dark membrane, and containing a semi-solid, fœtid-smelling, yellow mass, which on microscopical examination is found to be composed of pus cells, crystals and debris. The cavity is 2½" in diameter, ½" from the floor to the highest part of the roof, and  $\frac{3}{8}$ " at the circumference. Its walls are  $\frac{1}{2}$ " to  $\frac{3}{4}$ " in thickness, and present a dark slate-coloured hue; whilst on its floor, there are some small blood extravasations in its substance. Externally, the wall is pinkish white in colour, firm to the touch, and appears to be made up of white fibrous tissue. The tumour contains the spiroptera megastoma.

Kidneys.—The capsules strip easily. There are no petechiæ on the surface of the organs.

Intestines.—Present a healthy appearance.



## HORSE No. XLVIII.

Subcutaneous inoculation on two occasions with soiled rat's (*Mus decumanus*) blood. Results negative.

Inoculation with Horse-Surra blood 13 days after second inoculation. Period of incubation 10 days. Death on the 2nd day of disease.

White country-bred gelding, aged, in fair condition.

1891, October 9th.—Temperature A.M. 37.0°C. P.M. 37.4°C. Blood healthy.

|   |       |   |         |   |         |   |
|---|-------|---|---------|---|---------|---|
| „ | 10th. | „ | 37.2°C. | „ | 37.5°C. | „ |
| „ | 11th. | „ | 37.5°C. | „ | 38.2°C. | „ |
| „ | 12th. | „ | 37.5°C. | „ | 38.2°C. | „ |
| „ | 13th. | „ | 37.4°C. | „ | 38.2°C. | „ |
| „ | 14th. | „ | 37.4°C. | „ | 38.4°C. | „ |

15th.—Temperature A.M. 37.8°C. Blood healthy. At 4 P.M. inoculated the animal subcutaneously over the left scapular region with 0.75 c.c. of blood containing numerous hæmatozoa, taken from the heart of a rat (*Mus decumanus*) immediately after death. Temperature 5 P.M. 38.4°C.

16th.—There are a few ecchymoses on the conjunctivæ, deep red in colour and of recent date. There is at the seat of inoculation a hard, circumscribed swelling, ovoid in form, surrounded by œdema and measuring three inches in its largest diameter, and two inches in its shortest, and raised to the extent of one inch above the surrounding tissues. Temperature A.M. 38.1°C. No hæmatozoa. Temperature 5 P.M. 38.1°C.

17th.—The size of the swelling is less than yesterday; but the swelling is hard and tender to the touch. Several small ecchymoses, bright red in colour, are to be seen on the conjunctivæ, especially the right. Temperature A.M. 37.3°C. No hæmatozoa. Temperature 1 P.M. 37.8°C. Temperature 5 P.M. 38.3°C.

18th.—The swelling has still further decreased in size, but is hard and circumscribed. Temperature A.M. 37.3°C. No hæmatozoa. Temperature 1 P.M. 37.8°C. 5 P.M. 38°C.

19th.—The visible mucous membranes are tinged yellow this morning, but there are no ecchymoses. Temperature A.M. 37.5°C. No hæmatozoa. Temperature 1 P.M. 38.2°C. 5 P.M. 38.1°C.

From the 20th October to the 30th the animal appeared in good health, the temperature was normal and no hæmatozoa were observed in the blood; consequently on the latter date at 5 P.M. the animal was re-inoculated subcutaneously over the scapular regions with 0.75 c.c. of blood, containing numerous hæmatozoa, taken from the hearts of two rats (*Mus decumanus*), immediately after death.

31st.—The swelling on the left side measures 3" x 2" and is raised  $\frac{3}{4}$ " above the general surface of the surrounding skin. On the right side there is a large irregular-shaped swelling, measuring 3.5" x 2.5", over the scapula. Temperature A.M. 37.2°C. No hæmatozoa. Temperature 1 P.M. 38°C., 5 P.M. 38.1°C.

November 1st.—The swelling on the left side is reduced in size, that on the right remaining the same as yesterday, and is very tender on manipulation. Temperature A.M. 37.5°C. Hæmatozoa absent. Temperature 1 P.M. 38°C. 5 P.M. 38.3°C.

From the 2nd to the 4th instant the condition was unchanged.

5th.—The swelling on the right side continues large in size, and is tender. Temperature A.M. 38.1°C. No hæmatozoa. Temperature 1 P.M. 38°C., 5 P.M. 38.7°C.

6th.—Temperature A.M. 37.3°C., 1 P.M. 38.2°C., 5 P.M. 37.7°C. No hæmatozoa.

7th. „ 38°C. „ 38.2°C. „ 38.3°C. „

8th.—The swellings on both sides of the body have entirely disappeared. Temperature A.M. 38°C. No hæmatozoa. Temperature 1 P.M. 38.7°C., 5 P.M. 37.8°C.

From the 9th to the 12th, the condition was unchanged, and as no hæmatozoa were observed in the blood, the animal on the 12th was inoculated subcutaneously over the left scapular region with 0.5 c.c. of blood, containing no hæmatozoa, taken from the jugular vein of Horse No. L.

From the 13th November until the 19th, there was no change in the condition of the animal, but on the 20th, a slight thickening could be perceived at the seat of inoculation; otherwise there was nothing to point out the situation. Temperature A.M. 35.6°C. No hæmatozoa. Temperature 1 P.M. 37.8°C., 5 P.M. 38.7°C.

21st.—Temperature A.M. 37°C. No hæmatozoa. Temperature 1 P.M. 40°C., 5 P.M. 39.6°C.

22nd.—Temperature A.M. 37°C. Hæmatozoa numerous. Temperature 1 P.M. 38.8°C., 5 P.M. 38.2°C. There is a yellow tinge of the conjunctivæ, and of the mucous membranes generally. The membrana nictitans in each eye is the seat of numerous recent dark-coloured ecchymoses.

The animal fell at 9 P.M. and death took place at 1 o'clock A.M. on the 23rd.

Autopsy at 9 A.M., 23rd November 1891.

Body not emaciated; tissues stained yellow, no fluid in the pleural cavities, and no pleuritic adhesions.

Lungs.—The under-surface of the visceral pleuræ is dotted over with extravasations of blood. These are especially noticeable and aggregated together along the superior borders of the organs.

On section, the extravasations are  $\frac{1}{16}$ " in thickness, and do not appear to involve the lung substance.

Heart.—The base is covered by a layer of orange-coloured exudation,  $\frac{1}{2}$ " in thickness, which also accompanies the anterior and posterior coronary vessels in their course. The cavities of the organ are distended more or less with clots, some yellow and some dark-red in colour.

Right Auricle.—Presents a few sub-endocardial ecchymoses.

Right Ventricle.—Presents very numerous and extensive sub-endocardial ecchymoses.

## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Country-bred inoculated with Rats' blood on two occasions later with Horse Surra blood \_\_\_\_\_ Age, Aged \_\_\_\_\_ Sex, Gelding \_\_\_\_\_ Colour, White.

Disease, "Surra" inoculated \_\_\_\_\_ Date of inoculation  $\left\{ \begin{array}{l} 15.10.91. \\ 30.10.91. \end{array} \right.$  \_\_\_\_\_ Result, Death. \_\_\_\_\_ Date of Result, 23.11.91. \_\_\_\_\_ Register No. XLVIII.

| Disease. | "Surra" inoculated | Date of inoculation | Result, Death. | Date of Result. | Register No. |
|----------|--------------------|---------------------|----------------|-----------------|--------------|
|          |                    | 15. 10. 91.         |                | 23. 11. 91.     | XLVIII.      |
|          |                    | 30. 10. 91.         |                |                 |              |
|          |                    | 12. 11. 91.         |                |                 |              |

[illegible]

Hematization curve  
 Temperature

Done in the Linde's Pool Pharmacy, Office Room 1803

x  $\frac{15}{18}$ : Inoculated subcutaneously with 0.75cc of Rats (*Mus decumanus*) blood containing numerous hemolysates.  
 x  $\frac{50}{10}$ : Re-inoculated 1.0cc of





RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Disease \_\_\_\_\_ Date of \_\_\_\_\_ Result \_\_\_\_\_ Date of Result \_\_\_\_\_ Register No. XLVIII Age \_\_\_\_\_ Sex \_\_\_\_\_ Colour \_\_\_\_\_

| Dates of Observation         |                        | Nov.<br>1        |                  | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   |
|------------------------------|------------------------|------------------|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Days of Disease              |                        |                  |                  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Organisms in Blood.          |                        |                  |                  | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |
| Respiration<br>per<br>minute | Pulse<br>per<br>minute | Temperature<br>F | Temperature<br>C | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
|                              |                        | 114              |                  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 55                           | 120                    | 113              | 45°              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1    | 2    |      |
|                              |                        | 112              |                  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | N    | .    |      |
| 52                           | 110                    | 111              | 44°              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 45                           | 100                    | 110              | 43°              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 40                           | 90                     | 108              | 42°              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 35                           | 80                     | 106              | 41°              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 30                           | 70                     | 105              | 40°              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 25                           | 60                     | 103              | 39°              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 20                           | 50                     | 101              | 38°              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 15                           | 40                     | 99               | 37°              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 10                           | 30                     | 97               | 36°              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 5                            | 20                     | 95               | 35°              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        | 94               | 34°              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Swarming  
over 50 in  
a field of  
microscope

Very  
numerous  
= 50

Numerous  
= 20

Depth at 1 A.M. on the  
23rd  
Fav.  
= 5

Absent

Record of Organisms in Blood.

Swarming over 50 in a field of microscope

Very numerous = 50

Numerous = 20

Few = 5

Absent

Depth at 1 A.M. on the 23rd

Drawn & Litho. Govt. Photodup. Office Pondicherry 1893.

Hamatocrit curve Temperature

12. Incubated subcutaneously with 0.5cc of blood containing no hamatocrit taken from Horse No. L.



*Left Auricle.*—Healthy.

*Left Ventricle.*—There are only a few small sub-endocardial ecchymoses.

*Liver.*—Dark in colour, dotted over its surface with circular, hard, yellow-coloured bodies. There are several irregular shaped white patches, the seat of old inflammation of the capsule on the convex surface of the organ. *On section*, these yellow-coloured concretions are found varying in size from a pin's head to  $\frac{1}{8}$ " in diameter and invade the whole tissue.

*Spleen.*—Small, firm; some small petechiæ on the external surface of the capsule.

*Stomach.*—*Externally*, the organ presents numerous vessels, dark in colour and distended with blood clots, whilst to the attached border of the great omentum an extravasation of blood has taken place between the layers of peritoneum. *On section*, the organ contains a certain amount of semi-digested food. The *cuticular* portion is white in part, whilst the line of junction between the cuticular and *villous* portion is stained a bright yellow, and this colour is continued for 2" on the cuticular side of the boundary line, and then gradually fades. On the villous side of the boundary line and about 1" from it at the most inferior part of the organ, two ulcers are situated, small in size,  $1\frac{1}{4}$  of an inch in diameter with irregular edges involving only the mucous layer of the organ, and the second about half the size of the former, with a circular, well-defined edge; this also only involves the mucous coat.

*Kidneys.*—Capsules are easily removable; the stellate veins are injected on the inferior portions of the organs. There are a few circular extravasations about the size of a pin's head dotted over the surface of the cortical portion. *On section*, the organs are pale, but there are no extravasations visible.

*Bladder.*—Healthy.

*Small Intestines.*—Healthy.

*Large Intestines.*—Healthy.

*Cæcum and Colon.*—Healthy.

*Nostrils.*—Healthy.

### HORSE No. XLVI.

Subcutaneous inoculation with soiled rat's blood, result negative. Inoculation with Horse-Surra blood 39 days later. Latent period 8 days. Death on the 6th day of disease.

Black, country-bred, entire, aged, strong and in excellent condition.

| Date.          | Day of Disease. | Temperature °C. |        |        | Hæmatozoa in Blood. | Urine.  |        |           |          |             | REMARKS.  |
|----------------|-----------------|-----------------|--------|--------|---------------------|---------|--------|-----------|----------|-------------|---|
|                |                 | A.M.            | 1 P.M. | 5 P.M. |                     | Colour. | Sp.Gr. | Reaction. | Albumen. | Phosphates. |   |
| 1891.          |                 |                 |        |        |                     |         |        |           |          |             |   |
| October 15 ... | ...             | ...             | ...    | 37.3   | Healthy.            | ...     | ...    | ...       | ...      | ...         | 15th.—The animal was inoculated subcutaneously over the left scapular region with 2.0 c.c. of blood containing numerous hæmatozoa taken from the hearts of two rats ( <i>Mus decumanus</i> ) immediately after death. |
| " 16 ...       | ...             | 36.0            | 37.3   | 38.4   | Absent.             | Turbid. | 1.018  | Alkaline. | Nil.     | Nil.        | 16th.—There is a circular raised swelling at the seat of inoculation 1.5" in diameter, tender on manipulation. The visible mucous membranes are clear, and the conjunctivæ are free from ecchymoses.                  |
| " 17 ...       | ...             | 36.1            | 37.5   | 38.2   | "                   | "       | 1.026  | "         | "        | "           | 17th.—Swelling increased, and is now surrounded with œdema.   |
| " 18 ...       | ...             | 36.6            | 38.2   | 38.3   | "                   | "       | 1.028  | "         | "        | "           | 18th.—Swelling still further increased, measures 3.5" in diameter.  |
| " 19 ...       | ...             | 37.0            | 37.8   | 38.1   | "                   | "       | 1.036  | "         | "        | "           | 19th.—Swelling and œdema still further increased; the tumour is tense and extremely tender; appetite excellent.   |
| " 20 ...       | ...             | 36.7            | 37.6   | 38.2   | "                   | "       | 1.032  | "         | "        | "           | 20th.—Do. do.   |
| " 21 ...       | ...             | 36.1            | 37.2   | 38.8   | "                   | "       | 1.035  | "         | "        | "           | 21st.—Do. do.   |
| " 22 ...       | ...             | 36.6            | 37.4   | 38.5   | "                   | "       | 1.030  | "         | "        | "           | 22nd.—Do. do.   |
| " 23 ...       | ...             | 36.8            | 37.4   | 38.4   | "                   | "       | 1.026  | "         | "        | Trace.      | 23rd.—The œdema surrounding the swelling has entirely disappeared.  |
| " 24 ...       | ...             | 37.0            | 37.6   | 38.2   | "                   | "       | 1.026  | "         | "        | "           | 24th.—The swelling has decreased in size, and is less tense and tender.   |
| " 25 ...       | ...             | 36.7            | 38.2   | 38.0   | "                   | "       | 1.018  | "         | "        | "           | 25th.—Do. do.   |



| Date.    | Day of Disease. | Temperature °C. |        |        | Hæmatozoa in Blood. | Urine.         |         |          |              |             | REMARKS. |   |
|----------|-----------------|-----------------|--------|--------|---------------------|----------------|---------|----------|--------------|-------------|----------|---|
|          |                 | A.M.            | 1 P.M. | 5 P.M. |                     | Colour.        | Sp. Gr. | Reaction | Albumen.     | Phosphates. |          |   |
| 1891.    |                 |                 |        |        |                     |                |         |          |              |             |          |   |
| October  | 26 ...          | ...             | 36.7   | 38.0   | 38.0                | Absent         | Turbid. | 1,028    | Alka - line. | Nil.        | Trace.   | 26th.—Swelling smaller.   |
| "        | 27 ..           | ...             | 37.1   | 38.1   | 38.1                | "              | "       | 1,038    | "            | "           | "        |   |
| "        | 28 ...          | ...             | 36.7   | 38.1   | 38.0                | "              | "       | 1,032    | "            | "           | "        |   |
| "        | 29 ...          | ...             | 36.8   | 38.2   | 38.3                | "              | "       | 1,028    | "            | "           | "        |   |
| "        | 30 ...          | ...             | 36.7   | 38.1   | 37.6                | "              | "       | 1,028    | "            | "           | "        | 30th.—Swelling almost entirely disappeared.   |
| "        | 31 ...          | ...             | 36.8   | 38.1   | 38.1                | "              | "       | 1,022    | "            | "           | "        | 31st.—Do. do.   |
| November | 1 ...           | ..              | 36.6   | 38.1   | 38.1                | "              | "       | 1,024    | "            | "           | "        | 1st.—Swelling entirely disappeared.   |
| "        | 2 ...           | ...             | 36.4   | 37.5   | 37.8                | "              | "       | 1,029    | "            | "           | "        |   |
| "        | 3 ...           | ...             | 36.4   | 37.7   | 38.3                | "              | "       | 1,028    | "            | "           | "        |   |
| "        | 4 ...           | ...             | 36.0   | 37.8   | 38.1                | "              | "       | 1,048    | "            | "           | "        |   |
| "        | 5 ...           | ...             | 36.1   | 38.1   | 38.4                | "              | "       | 1,012    | "            | "           | "        |   |
| "        | 6 ...           | ...             | 36.6   | 38.1   | 38.4                | "              | "       | 1,032    | "            | "           | "        |   |
| "        | 7 ...           | ...             | 37.0   | 38.3   | 38.2                | "              | "       | 1,048    | "            | "           | "        |   |
| "        | 8 ...           | ...             | 37.8   | 38.4   | 38.3                | "              | "       | 1,046    | "            | "           | "        |   |
| "        | 9 ...           | ...             | 37.6   | 38.4   | 38.5                | "              | "       | 1,040    | "            | "           | "        |   |
| "        | 10 ...          | ...             | 37.6   | 38.0   | 38.3                | "              | "       | 1,035    | "            | "           | "        |   |
| "        | 11 ...          | ...             | 37.1   | 38.5   | 38.6                | "              | "       | 1,033    | "            | "           | "        |   |
| "        | 12 ...          | ...             | 35.8   | 37.7   | 38.3                | "              | "       | 1,040    | "            | "           | "        |   |
| "        | 13 ...          | ...             | 36.3   | 37.2   | 37.8                | "              | "       | 1,037    | "            | "           | "        |   |
| "        | 14 ...          | ...             | 35.5   | 37.5   | 38.0                | "              | "       | 1,055    | "            | "           | "        |   |
| "        | 15 ...          | ...             | 36.5   | 37.3   | 37.8                | "              | "       | 1,028    | "            | "           | "        |   |
| "        | 16 ...          | ...             | 36.1   | 37.3   | 38.1                | "              | "       | 1,031    | "            | "           | "        |   |
| "        | 17 ...          | ...             | 36.5   | 38.0   | 38.0                | "              | "       | 1,038    | "            | "           | "        |   |
| "        | 18 ...          | ...             | 35.6   | 37.0   | 38.0                | "              | "       | 1,032    | "            | "           | "        |   |
| "        | 19 ...          | ...             | 35.5   | 37.6   | 37.5                | "              | "       | 1,029    | "            | "           | "        |   |
| "        | 20 ...          | ...             | 35.5   | 37.2   | 37.8                | "              | "       | 1,027    | "            | "           | "        |   |
| "        | 21 ...          | ...             | 36.6   | 37.5   | 37.7                | "              | "       | 1,022    | "            | "           | "        |   |
| "        | 22 ...          | ...             | 35.5   | 37.7   | 37.5                | "              | "       | 1,024    | "            | "           | "        |   |
| "        | 23 ...          | ...             | 36.1   | 37.5   | 36.7                | "              | "       | 1,032    | "            | "           | "        | 23rd.—As the animal continues in good health, it was decided to inoculate with Horse-Surra blood; consequently at 9-30 A.M., it was inoculated subcutaneously with 1 c.c. of blood, taken from the heart of Horse XLVIII, 8½ hours after death. |
| "        | 24 ...          | ...             | 35.6   | 37.6   | 37.5                | "              | "       | 1,035    | "            | "           | "        |   |
| "        | 25 ...          | ...             | 36.2   | 38.0   | 38.3                | "              | "       | 1,039    | "            | "           | "        |   |
| "        | 26 ...          | ...             | 36.1   | 38.0   | 37.8                | "              | "       | 1,040    | "            | "           | "        |   |
| "        | 27 ...          | ...             | 36.3   | 37.6   | 37.6                | "              | "       | 1,044    | "            | "           | "        | 27th.—There is a small circular raised swelling at the seat of inoculation.   |
| "        | 28 ...          | ...             | 36.7   | 38.1   | 38.1                | "              | "       | 1,038    | "            | "           | "        | 28th.—Swelling now measures 1.5" in diameter, and is tender on manipulation.  |
| "        | 29 ...          | ...             | 36.6   | 37.6   | 38.0                | "              | "       | 1,041    | "            | "           | "        | 29th.—Swelling 2" in diameter and raised 1" above surrounding tissues; it is tense and extremely tender to the touch.   |
| "        | 30 ...          | ...             | 37.0   | 38.0   | 38.6                | "              | "       | 1,037    | "            | "           | "        | 30th.—Swelling further increased.   |
| December | 1 ...           | ...             | 38.1   | 39.4   | 39.0                | Few.           | "       | 1,040    | "            | "           | "        | 1st.—Swelling somewhat smaller and tension reduced.   |
| "        | 2 ...           | ...             | 40.1   | 39.8   | 38.6                | Numerous.      | "       | 1,038    | "            | "           | "        | 2nd.—Animal shows marked signs of weakness and is extremely dull. The visible mucous membranes are tinged yellow, and there are some petechiæ on both conjunctivæ.  |
| "        | 3 ...           | ...             | 36.8   | 37.8   | 39.6                | Very numerous. | "       | 1,042    | "            | "           | "        | 3rd.—Animal weaker; some cedema of hind limbs below the hocks. Swelling at seat of inoculation further reduced in size, and tenderness disappeared.   |

RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

Country bred, inoculated first with rube blood, at a later date with "Horse Surra" blood  
Disease "Surra" inoculated  
Age, Aged  
Sex, Entire  
Colour, Black  
Date of Inoculation { 15. 10. 91 Rat  
23. 11. 91 Horse  
Date of Result, 7. 12. 91  
Register No. XLVI.

| Dates of Observation    |                   | Oct 15        | 16  | 17        | 18   | 19        | 20   | 21        | 22   | 23        | 24   | 25        | 26   | 27        | 28   | 29        | 30   | 31        | Nov. 1 | 2         | 3    | 4         | 5    | 6         | Record of Organisms in Blood |  |
|-------------------------|-------------------|---------------|-----|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|--------|-----------|------|-----------|------|-----------|------------------------------|--|
| Days of Disease         |                   |               |     |           |      |           |      |           |      |           |      |           |      |           |      |           |      |           |        |           |      |           |      |           |                              |  |
| Organisms in Blood.     |                   |               |     |           |      |           |      |           |      |           |      |           |      |           |      |           |      |           |        |           |      |           |      |           |                              |  |
| Respiration per minute. | Pulse per minute. | Temperature F | C   | Time A.M. | P.M. | Time A.M. | P.M. | Time A.M. | P.M. | Time A.M. | P.M. | Time A.M. | P.M. | Time A.M. | P.M. | Time A.M. | P.M. | Time A.M. | P.M.   | Time A.M. | P.M. | Time A.M. | P.M. | Time A.M. | P.M.                         |  |
| 55                      | 120               | 114           | 45° | 8         | 6    | 4         | 2    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .      | .         | .    | .         | .    | .         | .                            |  |
| 50                      | 110               | 112           | 44° | 8         | 6    | 4         | 2    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .      | .         | .    | .         | .    | .         | .                            |  |
| 45                      | 100               | 111           |     | 8         | 6    | 4         | 2    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .      | .         | .    | .         | .    | .         | .                            |  |
| 40                      | 90                | 109           |     | 8         | 6    | 4         | 2    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .      | .         | .    | .         | .    | .         | .                            |  |
| 35                      | 80                | 107           |     | 8         | 6    | 4         | 2    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .      | .         | .    | .         | .    | .         | .                            |  |
| 30                      | 70                | 105           |     | 8         | 6    | 4         | 2    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .      | .         | .    | .         | .    | .         | .                            |  |
| 25                      | 60                | 103           |     | 8         | 6    | 4         | 2    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .      | .         | .    | .         | .    | .         | .                            |  |
| 20                      | 50                | 101           |     | 8         | 6    | 4         | 2    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .      | .         | .    | .         | .    | .         | .                            |  |
| 15                      | 40                | 99            |     | 8         | 6    | 4         | 2    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .      | .         | .    | .         | .    | .         | .                            |  |
| 10                      | 30                | 97            |     | 8         | 6    | 4         | 2    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .      | .         | .    | .         | .    | .         | .                            |  |
| 5                       | 20                | 95            |     | 8         | 6    | 4         | 2    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .      | .         | .    | .         | .    | .         | .                            |  |
|                         |                   | 94            |     | 8         | 6    | 4         | 2    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .    | .         | .      | .         | .    | .         | .    | .         | .                            |  |

(5 415)

Hamatozon Curve  
Temperature

Drawn & Litho. Govt. Pharmacopoeia Office, Paris 1893.

Pulse  
Respiration

+ Inoculated at 5. P. M. with 2 c.c. of rats' blood containing numerous hamatozoa









|          |         |         |                 |      |      |         |
|----------|---------|---------|-----------------|------|------|---------|
| Disease, | Date of | Result, | Date of Result, | Age, | Sex, | Colour, |
|          |         |         |                 |      |      | XLVI.   |

(5 415)

### Macrotozoon Curve

### Temperature.....

|                  |       |
|------------------|-------|
| Pulse.....       | ..... |
| Respiration..... | ..... |





| Date.                   | Day of Disease. | Temperature °C. |        |        | Hæmatozoa in Blood. | Urine.  |         |                    |          |             | REMARKS.  |
|-------------------------|-----------------|-----------------|--------|--------|---------------------|---------|---------|--------------------|----------|-------------|---|
|                         |                 | A.M.            | 1 P.M. | 5 P.M. |                     | Colour. | Sp. Gr. | Reaction.          | Albumen. | Phosphates. |   |
| 1891.<br>December 4 ... | ...             | 37.2            | 38.5   | 39.3   | Swarming.           | Clear.  | 1,042   | Slightly alkaline. | Nil.     | Nil.        | 4th.—General condition worse, cedema and swelling of hind limbs has increased, and the mucous membranes have become intensely yellow, and there are extensive conjunctival extravasations, appetite good. |
| „ 5 ...                 | ...             | 37.8            | 38.5   | 39.2   | Do.                 | „       | 1,032   | Acid.              | „        | „           | 5th.—Animal much weaker, appetite failing, and usual symptoms of Surra are aggravated.  |
| „ 6 ...                 | ...             | 37.5            | 38.2   | 38.5   | Do.                 | „       | 1,020   | Strongly acid.     | „        | „           | 6th.—Animal very weak, and death took place at 12-30 A.M. on the 7th.   |

*Autopsy.*—The body is emaciated. The visible mucous membranes are yellow in colour, and there is some swelling and cedema of the lower portion of the abdomen and sheath. Between the abdominal muscles and the skin at the most dependent part of the belly, there is a collection of orange-coloured exudation, which runs from the scrotum forward to between the fore limbs on to the front of the chest. All the tissues and organs of the body are stained an orange colour.

*Thorax.*—The pleuræ are not adherent on either side of the chest, and there is no fluid in the pleural cavities. The trachea is surrounded by a certain amount of the yellow-coloured exudation, which is also present in small amount round the larynx.

*Lungs.*—Are well distended with air. Here and there a few small dark red-coloured petechiæ are present, lying under the visceral pleuræ. *On section*, the organs present a healthy appearance.

*Heart.*—Weighs 6 lbs. 4 ozs., presents a large amount of yellow-coloured exudation around the base of the organ, and surrounding the great vessels. There are large and small ecchymoses, and extensive extravasations of blood lying on the right ventricle, and running down on either side of the anterior coronary vessels. These extravasations are of a dark-red colour, and lie beneath the visceral pericardium, and appear only to involve the subjacent muscular tissues to a very limited degree.

*Right Auricle.*—Contains dark blood clots, and presents six or seven small sub-endocardial petechiæ.

*Right Ventricle.*—Contains blood clots, running up the large vessels. There are several large sub-endocardial extravasations involving the musculi papillares.

*Left Auricle.*—Presents a healthy appearance.

*Left Ventricle.*—Is contracted, and walls hypertrophied. There are numerous large and extensive sub-endocardial extravasations.

*Liver.*—Weighs 13 lbs. 9 ozs., is tinged yellow and presents numerous small circular bodies about the size of shot grains dotted over the surfaces of the organ, and throughout its tissues *on section*. These bodies are yellow in colour, and hard in consistency.

*Stomach.*—*Cuticular* and *villous* portions healthy, with the exception of a small lump near the boundary line, lying on the villous portion. This tumour is hard and *on section* contains numerous *Spiroptera Megastoma*.

*Spleen.*—Weighs 4 lbs. 12 ozs., yellow tinged, firm, with numerous petechiæ scattered over the capsule; *on section* tissues appear healthy.

*Kidneys.*—*Right* weighs 1 lb. 6 ozs., *Left* 1 lb. 4 ozs. The capsules strip easily, and present no extravasations. *On section*, the organs are pale and are tinged yellow.

*Small Intestines.*—A few small ecchymoses scattered over the surface of the mucous membrane; no ulcers; tissues are stained yellow. No parasites.

*Large Intestines.*—*Cæcum* and *Colon* somewhat distended with gas; no petechiæ, but a few parasites (*strongylus armatus*).

#### HORSE No. LVIII.

Subcutaneous inoculation with soiled rat's blood, result negative. After 41 days, re-inoculation with Horse-Surra blood. Latent period 9 days, death on the 9th day of disease.

Brown country-bred, aged, in fair condition and healthy.

| Date.                   | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | REMARKS.   |
|-------------------------|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|--|
|                         |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |  |
| 1892.<br>February 18th. | ...             | 36.3            | ...    | 38.1   | 28     | 30   | 20           | 20   | Healthy ...         | 18th.—The animal was subcutaneously inoculated over the left shoulder with 2.0 c.c. of blood, containing very numerous and active hæmatozoa, taken from the hearts of several rats ( <i>Mus decumanus</i> ) immediately after death. |

| Date.          | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | REMARKS.  |
|----------------|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|---|
|                |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |   |
| 1892.          |                 |                 |        |        |        |      |              |      |                     |   |
| February 19... | ...             | 36.2            | 37.6   | 37.5   | 28     | 30   | 20           | 23   | Absent              | 19th.—There is slight swelling at the seat of inoculation.  |
| " 20...        | ...             | 37.5            | 38.3   | 38.5   | 37     | 40   | 20           | 23   | "                   | 20th.—Swelling increased, and some tenderness.  |
| " 21...        | ...             | 37.6            | 38.5   | 38.2   | 34     | 40   | 20           | 23   | "                   | 21st.—Swelling now measures 2.5" in diameter, with a zone of œdema surrounding it.  |
| " 22...        | ...             | 37.0            | 38.2   | 38.2   | 39     | 42   | 18           | 20   | "                   | 22nd.—Swelling further increased, considerable tenderness on pressure. Few small petechiæ on the conjunctivæ.   |
| " 23...        | ...             | 37.4            | 38.2   | 38.0   | 40     | 41   | 18           | 22   | "                   | 23rd.— Do. do.  |
| " 24...        | ...             | 37.5            | 38.2   | 38.5   | 30     | 33   | 13           | 16   | "                   | 24th.— Do. do.  |
| " 25...        | ...             | 37.4            | 38.8   | 37.7   | 37     | 35   | 12           | 14   | "                   | 25th.— Do. do.  |
| " 26...        | ...             | 36.5            | 38.5   | 37.7   | 36     | 38   | 24           | 24   | "                   | 26th.—The œdematous zone has decreased in extent, and the animal is bright.   |
| " 27...        | ...             | 36.2            | 39.5   | 39.8   | 36     | 47   | 14           | 16   | "                   | 27th.—Swelling decreased, but still somewhat tender.  |
| " 28...        | ...             | 38.0            | 39.4   | 39.2   | 36     | 40   | 15           | 15   | "                   | 28th.—The rise in temperature was due to the bite of a hornet on the margin of the nostril.   |
| " 29...        | ...             | 36.5            | 38.5   | 37.8   | 36     | 32   | 18           | 15   | "                   | ...   |
| March 1...     | ...             | 36.7            | 39.3   | 39.5   | 70     | 65   | 20           | 18   | "                   | 1st.—Swelling at seat of inoculation is now 2" in diameter. Somewhat hard to the touch.   |
| " 2...         | ...             | 36.4            | 38.3   | 38.1   | 35     | 35   | 16           | 14   | "                   | ...   |
| " 3...         | ...             | 37.0            | 37.7   | 38.2   | 32     | 34   | 11           | 13   | "                   | 3rd.—Swelling further decreased, and feels softer.  |
| " 4...         | ...             | 36.3            | 37.6   | 38.3   | 32     | 33   | 11           | 11   | "                   | 4th.—Swelling now measures only ¾" in diameter.   |
| " 5...         | ...             | 36.1            | 38.5   | 38.1   | 36     | 36   | 12           | 12   | "                   | ...   |
| " 6...         | ...             | 36.3            | 38.1   | 38.2   | 36     | 33   | 12           | 14   | "                   | ...   |
| " 7...         | ...             | 37.0            | 38.2   | 38.2   | 28     | 28   | 16           | 16   | "                   | 7th.—The animal appears in perfect health.  |
| " 8...         | ...             | 36.3            | 37.7   | 38.5   | 28     | 32   | 16           | 18   | "                   | ...   |
| " 9...         | ...             | 37.3            | 38.3   | 38.5   | 36     | 36   | 22           | 22   | "                   | 9th.—Swelling entirely disappeared, only slight thickening of tissues left. From the 10th to the 28th March the animal was apparently in good health, with the exception of a rise in temperature on the 25th instant.  |
| " 29...        | ...             | 37.8            | 38.5   | 38.1   | 40     | 44   | 24           | 28   | "                   | 29th.—As the animal has remained in good health for 40 days since the inoculation with rat's blood, it was decided to inoculate it with Horse-Surra blood to see if any immunity had been conferred by the first injection. Consequently the animal was inoculated at 10 A.M. with 1.0 c.c. of blood drawn from the heart of Horse XLVII, 5 hours after death. (Previous to death, the injected blood contained swarms of hæmatozoa). |
| " 30...        | ...             | 38.3            | 40.0   | 39.5   | 48     | 48   | 36           | 34   | "                   | 30th.—Slight swelling and tenderness on pressure at the seat of inoculation.  |
| " 31...        | ...             | 38.5            | 39.2   | 39.1   | 36     | 38   | 28           | 29   | "                   | 31st.—Increased swelling and tenderness.  |
| April 1...     | ...             | 38.1            | 39.3   | 39.1   | 36     | 36   | 28           | 26   | "                   | 1st. Do. do.  |
| " 2...         | ...             | 38.1            | 39.3   | 39.0   | 36     | 36   | 24           | 22   | "                   | 2nd.—Swelling and tenderness further increased.   |
| " 3...         | ...             | 39.0            | 39.7   | 40.4   | 36     | 54   | 20           | 32   | "                   | 3rd.—There is an extensive, somewhat circular, raised swelling, 7" in diameter, and raised .75" above the surrounding tissues at the seat of inoculation; occupying the centre of the former is a second tumour 3.5" in diameter, and raised .7" above it. These swellings are hard and very tender on pressure.  |



| Date, | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | REMARKS.  |
|-------|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|---|
|       |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |   |
| 1892. |                 |                 |        |        |        |      |              |      |                     |   |
| April | 4...            | ...             | 39.8   | 40.1   | 39.6   | 68   | 52           | 36   | 30                  | Absent ... 4th.—The lower swelling has disappeared, but the central one is increased, measuring 5" × 3".  |
| "     | 5...            | ...             | 38.1   | 40.0   | 39.5   | 48   | 48           | 27   | 33                  | " ... 5th.— Do. do.   |
| "     | 6...            | ...             | 38.1   | 39.0   | 39.3   | 48   | 48           | 36   | 32                  | " ... 6th.—The tumour at the seat of inoculation burst, and several ounces of pus exuded.   |
| "     | 7...            | 1               | 39.5   | 40.0   | 40.3   | 48   | 56           | 32   | 36                  | Numerous ... 7th.—Swelling considerably reduced in size, and much of the tenderness has disappeared. Pulse weak and easily compressible.  |
| "     | 8...            | 2               | 40.6   | 41.5   | 41.5   | 60   | 64           | 38   | 40                  | Very numerous. 8th, 6 A.M.—Urticarial eruption involving head and neck was first observed. Hind limbs and sheath swollen and œdematous. One large extravasation, '25" square, present on the left membrana nictitans. |
| "     | 9...            | 3               | 39.7   | 40.2   | 40.4   | 72   | 72           | 38   | 38                  | Very numerous. 11 A.M.—Eruption now covers the fore limbs, chest and back, and by noon the inguinal regions and inner aspects of the thighs were involved.  |
| "     | 10...           | 4               | 39.5   | 40.0   | 40.5   | 60   | 70           | 42   | 52                  | " ... 6 P.M.—Eruption disappearing slowly, and at 8 P.M. little remained.   |
| "     | 11...           | 5               | 40.6   | 41.3   | 40.4   | 72   | 76           | 60   | 56                  | Numerous ... 9th.—Eruption entirely disappeared. Conjunctival extravasation fading. Pulse weak and irregular.   |
| "     | 12...           | 6               | 39.2   | 39.4   | 39.3   | 72   | 75           | 40   | 40                  | Absent ... 10th.—Few petechiæ on right conjunctiva.   |
| "     | 13...           | 7               | 38.1   | 39.3   | 39.5   | 72   | 72           | 40   | 40                  | " ... 11th.—Animal dull, appetite poor. Swelling and œdema of limbs, abdomen and sheath had increased.  |
| "     | 14...           | 8               | 38.7   | 39.2   | 39.6   | 72   | 67           | 40   | 40                  | " ... 4 P.M.—Breathing became embarrassed, and the visible mucous membranes assumed a dirty yellow colour.  |
| "     | 15...           | 9               | 38.1   | 39.0   | 39.4   | 52   | 60           | 42   | 45                  | Few ... 12th.—Swelling of abdomen decreased.  |
| "     | 16...           | 10              | 41.3   | 41.4   | 41.2   | 72   | 75           | 54   | 56                  | Swarming ... 13th.—Animal brighter, appetite improved, breathing frequent, but not so embarrassed. Swelling at seat of inoculation almost disappeared.  |
| "     | 17...           | 11              | 42.1   | 41.4   | 40.5   | 70   | 65           | 56   | 56                  | " ...   |
| "     | 18...           | 12              | 38.1   | 38.6   | 39.1   | 60   | 60           | 60   | 54                  | Absent ...  |
| "     | 19...           | 13              | 38.1   | 39.1   | 39.0   | 56   | 56           | 42   | 40                  | " ... 19th.—Swelling and œdema reduced.   |
| "     | 20...           | 14              | 38.5   | 38.4   | 39.3   | 60   | 56           | 42   | 42                  | Few ...   |
| "     | 21...           | 15              | 39.1   | 39.8   | 40.0   | 60   | 65           | 42   | 44                  | " ...   |
| "     | 22...           | 16              | 40.6   | 41.2   | 41.7   | 78   | 78           | 56   | 49                  | Very numerous. 22nd.—Animal weak, breathing more frequent, appetite bad.  |
| "     | 23...           | 17              | 40.5   | 41.0   | 40.6   | 80   | 78           | 56   | 52                  | " ...   |
| "     | 24...           | 18              | 40.2   | 40.3   | 40.3   | 72   | 70           | 51   | 55                  | Numerous ...  |
| "     | 25...           | 19              | 39.8   | 40.4   | 40.4   | 66   | 60           | 60   | 60                  | Few ... 25th.—Animal weaker.  |
| "     | 26...           | 20              | 39.4   | 40.1   | 40.1   | 58   | 55           | 60   | 54                  | Absent ...  |
| "     | 27...           | 21              | 40.0   | 40.7   | 40.7   | 53   | 56           | 39   | 37                  | " ... 27th.—Animal still weak, but appetite is good.  |
| "     | 28...           | 22              | 40.7   | 41.1   | 41.3   | 60   | 60           | 33   | 40                  | Very numerous.  |
| "     | 29...           | 23              | 40.5   | 40.7   | 40.7   | 60   | 64           | 47   | 40                  | Numerous ...  |
| "     | 30...           | 24              | 40.0   | 40.6   | 40.6   | 64   | 64           | 40   | 39                  | Few ... 30th.—Animal weaker, but appetite still continues good.   |
| May   | 1...            | 25              | 40.0   | 40.2   | 40.1   | 64   | 64           | 39   | 39                  | Absent ...  |
| "     | 2...            | 26              | 38.8   | 39.7   | 40.1   | 60   | 60           | 36   | 36                  | " ...   |
| "     | 3...            | 27              | 39.8   | 40.5   | 42.0   | 60   | 136          | 40   | 56                  | Few ... 3rd.—Animal dying. Swelling and œdema of abdomen has increased. Chloroform administered at 6.45 P.M.  |

*Autopsy.*—One hour after death.

The body is somewhat emaciated, there is considerable swelling and œdema of the lower part of the abdominal walls, extending between the fore limbs and involving the sheath and scrotum.

*Thorax.*—There is no fluid in the pleural cavities. No adhesions of the pleuræ.

*Lungs.*—The surfaces of both lungs are dotted over with ecchymoses, about  $\frac{1}{6}$ " in diameter. There is some emphysema at the apices of the organs. *On section* of the organs, they present a dark-red colour, dark blood exudes from the cut surfaces, but the tissues appear healthy.

*Pericardium.*—Contains several ounces of an orange-coloured turbid fluid.

*Heart.*—Weight 5 lbs. 15 ozs., large. The external surface of the organ presents numerous small extravasations of blood lying upon the right ventricle, under the visceral pericardium. They also run in the course of the anterior coronary vessels, but the left ventricle is free. *On section*, the auricles and ventricles present no pathological lesions.

*Liver.*—Weight 6 lbs. 8 ozs., tissues dark in colour. Several white patches on the convex surface of the capsule, with old signs of perihepatitis. There are a few small, hard concretions, yellow in colour, dotted over the left lobe only. *On section*, tissues dark, and a few concretions are dotted through the substance of the left lobe.

*Stomach.*—The villous and cuticular portions of the organ are free from pathological changes, but there are great numbers of small worms, forming tangled masses—*Spiroptera megastoma*.

*Spleen.*—Weighs 2 lbs. 5 ozs. Numerous petechiæ dotted over the capsule on both surfaces. *On section*, tissues healthy.

*Kidneys.*—Right weighs 1 lb.  $7\frac{1}{2}$  ozs., left 1 lb. 11 ozs. Capsules strip easily, numerous small red petechiæ are dotted over the entire cortical surface. *On section*, tissues pale. The petechiæ also invade the cortical portion, but not the medullary.

*Small intestines.*—There are numerous petechiæ dotted at intervals over the entire length of the gut, but no sign of ulceration.

*Large intestines.*—Healthy, numerous parasites.

*Bladder.*—Mucous membrane presents a healthy appearance.



## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Country-bred

Disease, 'Surra' horse

*Date of inoculation* { *Rat-18-2-92*  
*Horse-29-3-92*

Result, Death

Date of Result, 3-5-92

Register No. LVIII

Age, aged \_\_\_\_\_ Sex, Gelding \_\_\_\_\_ Colour, Brown

Age, aged \_\_\_\_\_ Sex, Gelding \_\_\_\_\_ Colour, Brown

[illegible]

(S. 415)

Normatozon Curve . . . . .  
Temperature . . . . .

Drawn & Litho: Govt Photoduplino: Office, Poona 1893.

Drawn & Litho: Govt Photodup: Office, Poona 1893.





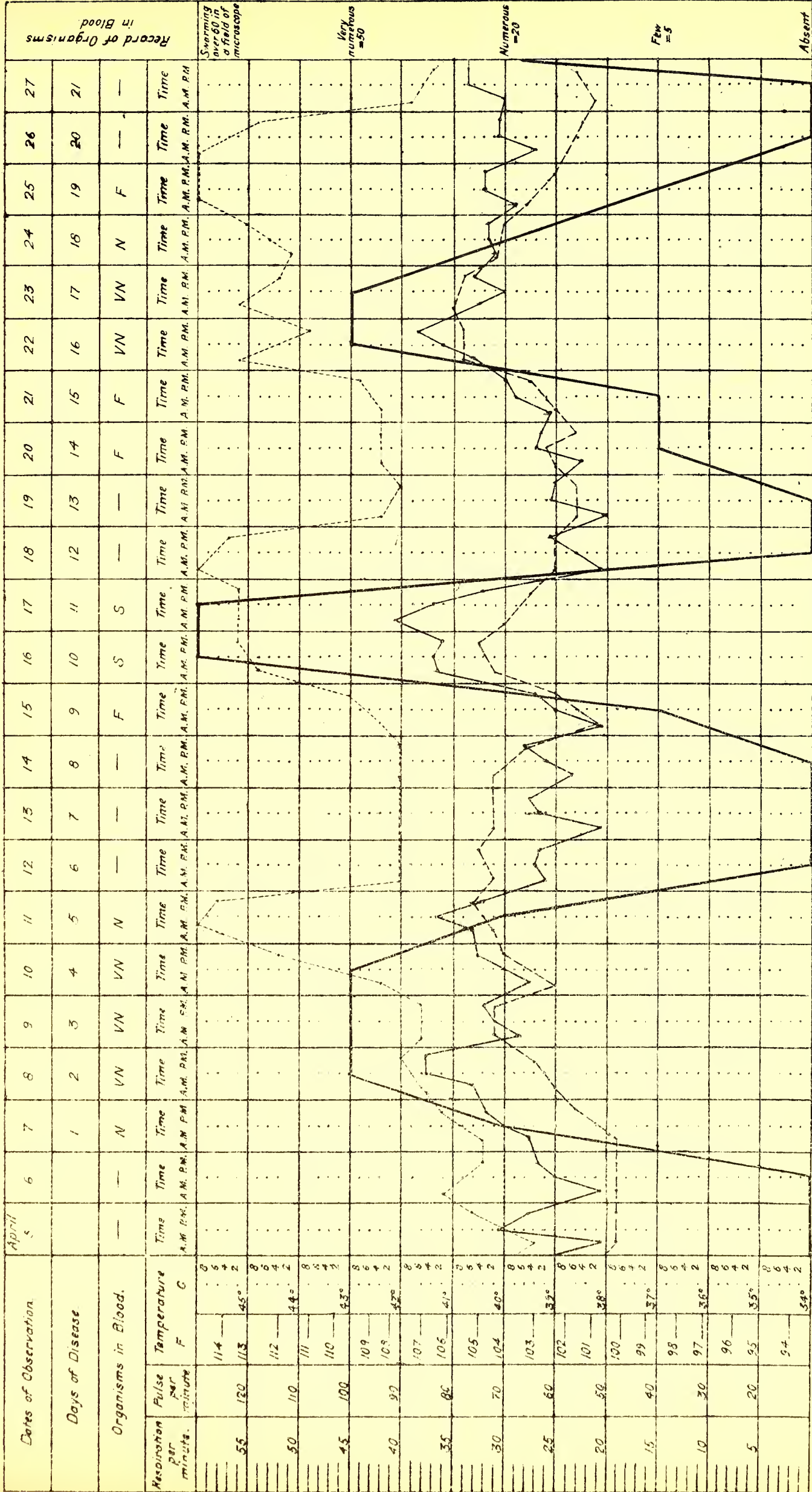






RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

Disease, \_\_\_\_\_ Date of \_\_\_\_\_ Result, \_\_\_\_\_ Date of Result, \_\_\_\_\_ Register No. LVIII \_\_\_\_\_ Age, \_\_\_\_\_ Sex, \_\_\_\_\_ Colour, \_\_\_\_\_





\_\_\_\_\_ Age, \_\_\_\_\_ Sex, \_\_\_\_\_ Colour, \_\_\_\_\_  
 Disease, \_\_\_\_\_ Date of \_\_\_\_\_ Result, \_\_\_\_\_ Register No. LVIII

| Dates of Observation. |             | Organisms in Blood. |     | Temperature |      | Pulse |      | Respiration |      | Days of Disease |      | April |      | May  |      | 3    |      | 2    |      | 1    |      |   |   |
|-----------------------|-------------|---------------------|-----|-------------|------|-------|------|-------------|------|-----------------|------|-------|------|------|------|------|------|------|------|------|------|---|---|
| per minute.           | per minute. | F                   | C   | Time        | Time | Time  | Time | Time        | Time | Time            | Time | Time  | Time | Time | Time | Time | Time | Time | Time | Time |      |   |   |
|                       |             |                     |     | A.M.        | P.M. | A.M.  | P.M. | A.M.        | P.M. | A.M.            | P.M. | A.M.  | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |   |   |
| 55                    | 120         | 114                 | 43° | 8           | 6    | 4     | 2    | 8           | 6    | 4               | 2    | 8     | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4 | 2 |
| 50                    | 110         | 112                 | 44° | 8           | 6    | 4     | 2    | 8           | 6    | 4               | 2    | 8     | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4 | 2 |
| 45                    | 100         | 111                 | 43° | 8           | 6    | 4     | 2    | 8           | 6    | 4               | 2    | 8     | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4 | 2 |
| 40                    | 90          | 109                 | 42° | 8           | 6    | 4     | 2    | 8           | 6    | 4               | 2    | 8     | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4 | 2 |
| 35                    | 80          | 106                 | 41° | 8           | 6    | 4     | 2    | 8           | 6    | 4               | 2    | 8     | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4 | 2 |
| 30                    | 70          | 104                 | 40° | 8           | 6    | 4     | 2    | 8           | 6    | 4               | 2    | 8     | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4 | 2 |
| 25                    | 60          | 103                 | 39° | 8           | 6    | 4     | 2    | 8           | 6    | 4               | 2    | 8     | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4 | 2 |
| 20                    | 50          | 101                 | 38° | 8           | 6    | 4     | 2    | 8           | 6    | 4               | 2    | 8     | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4 | 2 |
| 15                    | 40          | 99                  | 37° | 8           | 6    | 4     | 2    | 8           | 6    | 4               | 2    | 8     | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4 | 2 |
| 10                    | 30          | 97                  | 36° | 8           | 6    | 4     | 2    | 8           | 6    | 4               | 2    | 8     | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4 | 2 |
| 5                     | 20          | 95                  | 35° | 8           | 6    | 4     | 2    | 8           | 6    | 4               | 2    | 8     | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4 | 2 |
|                       |             | 94                  | 34° | 8           | 6    | 4     | 2    | 8           | 6    | 4               | 2    | 8     | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4 | 2 |

| Record of Organisms in Blood. |      | Swarming over 20 in a field of microscope |      | Very numerous ≈50 |      | Numerous ≈20 |      | Few ≈5 |      | Absent |      |
|-------------------------------|------|---|------|-------------------|------|--------------|------|--------|------|--------|------|
| Time                          | Time | Time                                      | Time | Time              | Time | Time         | Time | Time   | Time | Time   | Time |
| A.M.                          | P.M. | A.M.                                      | P.M. | A.M.              | P.M. | A.M.         | P.M. | A.M.   | P.M. | A.M.   | P.M. |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             | 6    | 4   | 2    | 8                 | 6    | 4            | 2    | 8      | 6    | 4      | 2    |
| 8                             |      |   |      |                   |      |              |      |        |      |        |      |

(S. 415)

Hematocrit Curve  
Temperature.....

Drawn & Litho: Gov<sup>t</sup> Photodupers: Office, Poona 1893.

Pulse.....

Respiration.....





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## B. RAT SURRA

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### APPENDIX V.

SUBCUTANEOUS INOCULATION OF ANIMALS OTHER  
THAN HORSES WITH SOILED RAT'S BLOOD.

#### RESULTS POSITIVE.

(A) BULL IV—MONKEY II—FIELD RATS I AND II, III AND IV.

#### RESULTS NEGATIVE.

(B) DONKEY III, MONKEY I—CAT II—RABBITS I, II, III, IV—GUINEA  
PIGS I, II, III—FOWLS I AND II.

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## BULL No. IV.

Deccani, aged 2 years, healthy and in good condition.

Inoculated with rat's (*Mus decumanus*) blood containing hæmatozoa. Urticarial eruption appeared on the 44th and 76th days, and the hæmatozoon on the 76th day, the paroxysm lasting 24 hours. Re-inoculation with soiled Horse-Surra blood after absence of the organism for 121 days. Period of incubation 80 days. Two further paroxysms of 48 and 24 hours respectively, with intermission of 77 days. Absence of the hæmatozoa for a further period of 195 days, when death occurred from injury.

| Date.   | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | URINE.  |         |               |         |                   |                  |
|---|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|---------------|---------|-------------------|------------------|
|   | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction.     | Albumen | Hippuric<br>Acid. | Phos-<br>phates. |
| 1892.   |                 |        |        |        |      |              |      |                        |         |         |               |         |                   |                  |
| July 24...  | ...             | ...    | 39.4   | ...    | ...  | ...          | ...  | Healthy.               | ...     | ...     | ...           | ...     | ...               | ...              |
| " 25...   | 39.1            | 39.2   | 39.3   | ...    | ...  | ...          | ...  | "                      | ...     | ...     | ...           | ...     | ...               | ...              |
| " 26...   | 39.3            | 39.6   | 40.1   | ...    | ...  | ...          | ...  | "                      | ...     | ...     | ...           | ...     | ...               | ...              |
| " 27 ..   | 38.8            | 39.0   | 39.3   | ...    | ...  | ...          | ...  | "                      | ...     | ...     | ...           | ...     | ...               | ...              |
| 4 P.M.—The animal was inoculated subcutaneously over the left shoulder with 2.0 c.c. of blood containing numerous hæmatozoa, which was taken from the rat ( <i>Mus decumanus</i> ) immediately after death. |                 |        |        |        |      |              |      |                        |         |         |               |         |                   |                  |
| " 28...   | 39.3            | 39.5   | 39.7   | ...    | ...  | ...          | ...  | Absent.                | ...     | ...     | ...           | ...     | ...               | ...              |
| There is a slight swelling at the seat of inoculation.  |                 |        |        |        |      |              |      |                        |         |         |               |         |                   |                  |
| " 29...   | 38.5            | 39.0   | 39.4   | ...    | ...  | ...          | ...  | Absent.                | ...     | ...     | ...           | ...     | ...               | ...              |
| " 30...   | 39.3            | 39.4   | 39.6   | ...    | ...  | ...          | ...  | "                      | Clear   | 1,028   | Alkaline.     | Nil     | Nil               | Nil.             |
| " 31...   | 38.5            | 38.8   | 39.3   | ...    | ...  | ...          | ...  | "                      | "       | 1,030   | Strongly alk. | "       | "                 | "                |
| The swelling at the seat of inoculation measures 4" x 2".   |                 |        |        |        |      |              |      |                        |         |         |               |         |                   |                  |
| August 1...   | 39.0            | 39.0   | 39.2   | ...    | ...  | ...          | ...  | "                      | "       | 1,032   | Alkaline.     | "       | "                 | "                |
| " 2...  | 39.2            | 40.0   | 40.3   | ...    | ...  | ...          | ...  | "                      | "       | 1,038   | "             | "       | "                 | "                |
| The swelling is circular in form, 3" in diameter and raised 1" at its summit above the surrounding tissue.  |                 |        |        |        |      |              |      |                        |         |         |               |         |                   |                  |
| " 3...  | 40.1            | 40.7   | 40.4   | ...    | 75   | ...          | 22   | "                      | "       | 1,047   | Strongly alk. | "       | "                 | "                |
| The swelling has increased still more in size, and is now hard, tense and tender.   |                 |        |        |        |      |              |      |                        |         |         |               |         |                   |                  |
| " 4...  | 39.0            | 39.3   | 40.7   | 66     | 72   | 21           | 22   | "                      | "       | 1,032   | "             | "       | "                 | Trace.           |
| The animal is losing flesh, but the appetite remains good.  |                 |        |        |        |      |              |      |                        |         |         |               |         |                   |                  |
| " 5...  | 39.3            | 39.3   | 39.6   | 64     | 64   | 28           | 16   | "                      | "       | 1,038   | "             | "       | "                 | Nil.             |
| The swelling at seat of inoculation continues hard and tense, and now measures 2.5" in diameter.  |                 |        |        |        |      |              |      |                        |         |         |               |         |                   |                  |
| " 6...  | 39.2            | 39.3   | 39.3   | 68     | 60   | 18           | 18   | "                      | "       | 1,034   | "             | "       | "                 | "                |
| Swelling reduced in size.   |                 |        |        |        |      |              |      |                        |         |         |               |         |                   |                  |
| " 7...  | 39.3            | 39.3   | 39.5   | 53     | 48   | 28           | 16   | "                      | "       | 1,030   | "             | "       | "                 | "                |
| " 8...  | 37.6            | 39.3   | 39.3   | 60     | 60   | 20           | 26   | "                      | "       | 1,024   | "             | "       | "                 | "                |
| " 9...  | 39.2            | 39.3   | 39.6   | 60     | 56   | 26           | 20   | "                      | "       | 1,030   | "             | "       | "                 | "                |
| " 10...   | 38.8            | 39.3   | 39.4   | 60     | 60   | 30           | 24   | "                      | "       | 1,028   | "             | "       | "                 | "                |
| " 11...   | 38.8            | 39.2   | 39.5   | 52     | 52   | 28           | 24   | "                      | "       | 1,030   | "             | "       | "                 | "                |
| " 12...   | 39.3            | 40.3   | 40.0   | 64     | 56   | 28           | 20   | "                      | "       | 1,032   | "             | "       | "                 | "                |
| " 13...   | 39.2            | 39.3   | 39.7   | 52     | 64   | 32           | 34   | "                      | "       | 1,036   | "             | "       | "                 | "                |
| " 14...   | 39.1            | 39.3   | 39.4   | 60     | 64   | 20           | 28   | "                      | "       | 1,028   | "             | "       | "                 | "                |
| " 15...   | 38.5            | 39.3   | 39.3   | 54     | 52   | 15           | 24   | "                      | "       | 1,032   | "             | "       | "                 | Trace.           |
| The swelling has entirely disappeared from the seat of inoculation.   |                 |        |        |        |      |              |      |                        |         |         |               |         |                   |                  |
| " 16...   | 39.2            | 39.3   | 39.6   | 56     | 60   | 17           | 20   | "                      | "       | 1,028   | "             | "       | "                 | "                |
| " 17...   | 39.1            | 39.3   | 39.3   | 60     | 56   | 22           | 28   | "                      | "       | 1,035   | "             | "       | "                 | "                |
| " 18...   | 38.0            | 39.3   | 39.6   | 52     | 44   | 22           | 20   | "                      | "       | 1,032   | "             | "       | "                 | Nil.             |
| " 19...   | 39.2            | 39.3   | 39.3   | 60     | 64   | 24           | 24   | "                      | "       | 1,032   | "             | "       | "                 | "                |
| " 20...   | 39.1            | 39.3   | 39.3   | 48     | 56   | 28           | 20   | "                      | "       | 1,037   | "             | "       | "                 | "                |
| " 21...   | 38.5            | 39.2   | 39.3   | 54     | 54   | 20           | 20   | "                      | "       | 1,056   | "             | "       | "                 | "                |
| " 22...   | 38.5            | 39.1   | 39.3   | 45     | 54   | 15           | 16   | "                      | "       | 1,039   | Slightly acid | "       | "                 | "                |
| " 23...   | 38.6            | 39.3   | 39.8   | 58     | 60   | 18           | 24   | "                      | "       | 1,040   | Alkaline.     | "       | "                 | "                |
| " 24...   | 38.6            | 39.3   | 39.3   | 52     | 60   | 17           | 16   | "                      | "       | 1,030   | "             | "       | "                 | "                |
| " 25...   | 39.2            | 39.3   | 40.0   | 56     | 56   | 21           | 20   | "                      | "       | 1,041   | Strongly alk. | "       | "                 | "                |
| " 26...   | 38.8            | 39.0   | 39.3   | 52     | 40   | 25           | 24   | "                      | "       | 1,046   | Alkaline.     | "       | "                 | "                |
| " 27...   | 38.6            | 39.2   | 39.3   | 52     | 60   | 24           | 20   | "                      | "       | 1,034   | "             | "       | "                 | "                |
| " 28...   | 38.5            | 39.3   | 39.3   | 56     | 60   | 24           | 16   | "                      | "       | 1,034   | "             | "       | "                 | "                |
| " 29...   | 39.1            | 39.6   | 40.0   | 60     | 48   | 24           | 20   | "                      | "       | 1,030   | "             | "       | "                 | "                |
| " 30...   | 39.0            | 39.6   | 39.8   | 60     | 68   | 20           | 16   | "                      | "       | 1,028   | "             | "       | "                 | "                |
| " 31...   | 39.3            | 39.3   | 39.3   | 58     | 46   | 16           | 14   | "                      | "       | 1,030   | "             | "       | "                 | Trace.           |

| Date.   | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.           |         |              |               |          |             |
|---|-----------------|--------|--------|--------|------|--------------|------|------------------------|------------------|---------|--------------|---------------|----------|-------------|
|   | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour.          | Sp. Gr. | Reaction.    | Albumen       | H. Acid. | Phosphates. |
| 1892.   |                 |        |        |        |      |              |      |                        |                  |         |              |               |          |             |
| September 1 ...   | 39.3            | 38.6   | 39.3   | 60     | 52   | 20           | 12   | Absent                 | Clear ...        | 1,046   | Alkaline...  | Nil.          | Nil.     | Trace.      |
| " 2 ...   | 39.1            | 38.6   | 39.3   | 56     | 60   | 16           | 20   | "                      | "                | 1,044   | "            | "             | "        | Nil         |
| " 3 ...   | 39.2            | 39.3   | 39.3   | 48     | 52   | 12           | 16   | "                      | "                | 1,033   | "            | "             | "        | "           |
| " 4 ...   | 38.6            | 39.0   | 39.1   | 48     | 56   | 16           | 16   | "                      | "                | 1,031   | "            | "             | "        | "           |
| " 5 ...   | 39.3            | 39.5   | 39.3   | 48     | 52   | 16           | 16   | "                      | "                | 1,026   | "            | "             | "        | "           |
| " 6 ...   | 38.1            | 39.1   | 38.7   | 52     | 44   | 16           | 16   | "                      | "                | 1,044   | "            | "             | "        | "           |
| " 7 ...   | 37.4            | 38.8   | 39.3   | 52     | 44   | 12           | 24   | "                      | "                | 1,043   | "            | "             | "        | "           |
| " 8 ...   | 38.8            | 40.1   | 40.1   | 48     | 52   | 20           | 20   | "                      | "                | 1,026   | "            | "             | "        | "           |
| " 9 ...   | 39.2            | 39.7   | 39.8   | 60     | 52   | 16           | 20   | "                      | "                | 1,034   | "            | "             | "        | "           |
| At 5-30 P.M., an urticarial eruption was observed for the first time on both sides of the neck, chest and scapular regions. No hæmatozoa however were discovered, although previous experience points to their being the cause of similar eruptions in other animals. |                 |        |        |        |      |              |      |                        |                  |         |              |               |          |             |
| " 10 ...  | 39.1            | 39.3   | 39.3   | 52     | 60   | 16           | 20   | Absent                 | Clear ...        | 1,034   | Alkaline...  | "             | "        | "           |
| 9 A.M.—The eruption disappeared. The animal is losing flesh.  |                 |        |        |        |      |              |      |                        |                  |         |              |               |          |             |
| " 11 ...  | 38.6            | 39.3   | 38.9   | 60     | 52   | 12           | 16   | "                      | "                | 1,036   | Str. Alk ... | "             | "        | "           |
| " 12 ...  | 38.7            | 38.3   | 39.3   | 60     | 56   | 18           | 20   | "                      | "                | 1,033   | Alkaline ... | "             | "        | "           |
| Losing flesh, especially in the flanks.   |                 |        |        |        |      |              |      |                        |                  |         |              |               |          |             |
| " 13 ...  | 39.1            | 39.6   | 39.8   | 52     | 80   | 20           | 16   | "                      | "                | 1,030   | "            | "             | "        | "           |
| " 14 ...  | 39.1            | 39.3   | 40.2   | 72     | 60   | 16           | 24   | "                      | "                | 1,022   | "            | "             | "        | "           |
| Muzzle dry, but appetite good, and rumination regular.  |                 |        |        |        |      |              |      |                        |                  |         |              |               |          |             |
| " 15 ...  | 37.6            | 39.7   | 40.0   | 60     | 64   | 16           | 20   | "                      | "                | 1,018   | "            | "             | "        | "           |
| " 16 ...  | 39.2            | 40.1   | 39.8   | 52     | 64   | 24           | 16   | "                      | "                | 1,039   | "            | "             | "        | "           |
| " 17 ...  | 39.1            | 38.0   | 39.3   | 60     | 52   | 24           | 20   | "                      | "                | 1,024   | "            | "             | "        | "           |
| " 18 ...  | 38.5            | 39.3   | 39.3   | 60     | 64   | 20           | 20   | "                      | "                | 1,016   | "            | "             | "        | "           |
| " 19 ...  | 39.3            | 39.3   | 40.03  | 64     | 44   | 20           | 20   | "                      | "                | 1,030   | Str. Alk ... | "             | "        | "           |
| " 20 ...  | 39.0            | 40.3   | 40.1   | 56     | 64   | 20           | 16   | "                      | "                | 1,010   | Alkaline...  | "             | "        | "           |
| " 21 ...  | 39.0            | 40.2   | 40.1   | 64     | 64   | 20           | 20   | "                      | "                | 1,026   | Str. Alk ... | "             | "        | "           |
| " 22 ...  | 39.0            | 40.0   | 40.1   | 60     | 60   | 16           | 24   | "                      | "                | 1,020   | "            | "             | "        | "           |
| " 23 ...  | 39.2            | 39.3   | 40.2   | 56     | 60   | 20           | 20   | "                      | "                | 1,016   | "            | "             | "        | "           |
| " 24 ...  | 39.3            | 40.0   | 39.3   | 60     | 56   | 16           | 16   | "                      | "                | 1,018   | Alkaline...  | "             | "        | "           |
| " 25 ...  | 38.6            | 39.3   | 39.3   | 60     | 60   | 20           | 22   | "                      | Slightly turbid. | 1,027   | Str. Alk ... | "             | "        | "           |
| " 26 ...  | 38.6            | 39.3   | 40.0   | 52     | 44   | 24           | 20   | "                      | "                | 1,033   | "            | "             | "        | "           |
| " 27 ...  | 39.1            | 39.3   | 39.3   | 64     | 40   | 28           | 24   | "                      | Clear, but dark. | 1,044   | "            | "             | "        | "           |
| " 28 ...  | 38.1            | 39.3   | 40.0   | 56     | 60   | 24           | 24   | "                      | Clear, but pale. | 1,030   | Alkaline...  | "             | "        | "           |
| " 29 ...  | 38.0            | 39.3   | 39.3   | 60     | 64   | 28           | 23   | "                      | Clear ...        | 1,016   | "            | "             | "        | "           |
| " 30 ...  | 39.0            | 38.6   | 40.0   | 60     | 56   | 16           | 24   | "                      | "                | 1,018   | "            | "             | "        | "           |
| October 1 ...   | 38.0            | 39.3   | 39.3   | 60     | 52   | 20           | 20   | "                      | "                | 1,032   | "            | Trace.        | "        | "           |
| " 2 ...   | 39.2            | 39.3   | 39.3   | 52     | 60   | 20           | 16   | "                      | "                | 1,020   | "            | "             | "        | "           |
| " 3 ...   | 37.6            | 39.3   | 39.3   | 48     | 60   | 16           | 16   | "                      | "                | 1,020   | "            | Nil.          | "        | "           |
| " 4 ...   | 38.5            | 39.3   | 40.1   | 48     | 60   | 16           | 20   | "                      | "                | 1,024   | "            | Trace.        | "        | "           |
| " 5 ...   | 38.5            | 39.2   | 40.0   | 44     | 68   | 20           | 24   | "                      | "                | 1,036   | "            | 1/24          | "        | "           |
| " 6 ...   | 38.3            | 39.4   | 40.0   | 60     | 60   | 20           | 24   | "                      | "                | 1,036   | "            | Slight Trace. | "        | "           |
| " 7 ...   | 39.0            | 38.8   | 39.1   | 60     | 60   | 20           | 24   | "                      | "                | 1,030   | "            | "             | "        | "           |
| " 8 ...   | 38.2            | 38.2   | 39.4   | 53     | 44   | 20           | 24   | "                      | "                | 1,030   | Str. Alk...  | "             | "        | "           |
| " 9 ...   | 38.0            | 38.9   | 39.0   | 25     | 56   | 20           | 24   | "                      | "                | 1,028   | Alkaline...  | "             | "        | "           |
| " 10 ...  | 38.1            | 38.6   | 39.0   | 25     | 60   | 20           | 24   | "                      | "                | 1,030   | "            | "             | "        | "           |
| " 11 ...  | 37.8            | 38.3   | 39.1   | 60     | 52   | 24           | 25   | Few                    | "                | 1,028   | "            | Trace.        | Nil.     | "           |
| At 5 P.M.—An eruption of urticaria has just appeared, and involves the skin covering the sides of the chest and belly.  |                 |        |        |        |      |              |      |                        |                  |         |              |               |          |             |
| " 12 ...  | 37.8            | 38.4   | 39.2   | 40     | 48   | 21           | 17   | Absent                 | "                | 1,030   | "            | "             | "        | "           |
| All signs of the eruption observed last evening have disappeared.   |                 |        |        |        |      |              |      |                        |                  |         |              |               |          |             |
| " 13 ...  | 38.5            | 38.3   | 39.0   | 44     | 52   | 20           | 24   | "                      | "                | 1,019   | "            | "             | "        | "           |
| " 14 ...  | 38.2            | 38.5   | 39.1   | 52     | 52   | 24           | 16   | "                      | "                | 1,020   | "            | "             | "        | "           |
| " 15 ...  | 37.6            | 38.5   | 39.2   | 48     | 56   | 16           | 16   | "                      | "                | 1,022   | "            | "             | "        | "           |
| " 16 ...  | 38.2            | 38.4   | 38.7   | 48     | 56   | 24           | 20   | "                      | "                | 1,024   | "            | 1/30          | Trace.   | "           |
| " 17 ...  | 38.0            | 38.5   | 38.5   | 60     | 56   | 16           | 20   | "                      | "                | 1,022   | "            | Trace.        | Nil.     | "           |
| " 18 ...  | 38.4            | 38.4   | 39.3   | 56     | 60   | 16           | 16   | "                      | "                | 1,036   | "            | "             | "        | "           |
| " 19 ...  | 38.1            | 38.8   | 39.3   | 60     | 56   | 28           | 24   | "                      | "                | 1,010   | "            | Nil.          | "        | "           |
| " 20 ...  | 38.3            | 38.7   | 39.1   | 56     | 64   | 20           | 20   | "                      | "                | 1,025   | "            | Trace.        | "        | "           |
| " 21 ...  | 38.5            | 38.2   | 39.0   | 64     | 60   | 20           | 16   | "                      | "                | 1,020   | "            | Nil.          | "        | "           |
| " 22 ...  | 38.2            | 38.4   | 38.7   | 64     | 56   | 20           | 20   | "                      | "                | 1,040   | "            | Trace.        | "        | "           |
| " 23 ...  | 38.0            | 38.6   | 39.0   | 64     | 60   | 16           | 20   | "                      | "                | 1,044   | "            | Nil.          | Trace.   | "           |
| " 24 ...  | 38.2            | 38.2   | 38.8   | 60     | 64   | 16           | 20   | "                      | "                | 1,020   | "            | "             | Nil.     | "           |
| " 25 ...  | 38.0            | 38.4   | 39.4   | 64     | 64   | 21           | 24   | "                      | "                | 1,030   | "            | Trace.        | "        | "           |



| Date. |        | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.    |         |             |          |                                   |             |  |
|-------|--------|-----------------|--------|--------|--------|------|--------------|------|------------------------|-----------|---------|-------------|----------|-----------------------------------|-------------|--|
|       |        | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour.   | Sp. Gr. | Reaction.   | Albumen. | H. Acid.                          | Phosphates. |  |
| 1892. |        |                 |        |        |        |      |              |      |                        |           |         |             |          |                                   |             |  |
| Oct.  | 26 ... | 38.5            | 38.6   | 39.0   | 64     | 64   | 20           | 20   | Absent                 | Clear ... | 1,034   | Alkaline... | Nil.     | Nil.                              | Nil.        |  |
| "     | 27 ... | 38.4            | 38.8   | 39.4   | 60     | 64   | 20           | 20   | " ...                  | " ...     | 1,036   | " ...       | "        | "                                 | "           |  |
| "     | 28 ... | 38.6            | 38.7   | 39.3   | 64     | 64   | 28           | 24   | " ...                  | " ...     | 1,030   | " ...       | "        | "                                 | "           |  |
| "     | 29 ... | 38.3            | 39.2   | 39.4   | 48     | 60   | 20           | 20   | " ...                  | " ...     | 1,030   | " ...       | "        | "                                 | "           |  |
| "     | 30 ... | 38.5            | 38.6   | 39.3   | 60     | 60   | 20           | 16   | " ...                  | " ...     | 1,032   | " ...       | Trace.   | Trace.                            | "           |  |
| "     | 31 ... | 38.3            | 39.1   | 39.1   | 52     | 64   | 16           | 16   | " ...                  | Turbid    | 1,030   | " ...       | "        | Nil.                              | "           |  |
| Novr. | 1 ..   | 38.4            | 39.1   | 39.2   | 56     | 60   | 16           | 20   | " ...                  | Clear ... | 1,032   | " ...       | Nil.     | Trace.                            | "           |  |
| "     | 2 ...  | 38.0            | 38.7   | 39.4   | 44     | 56   | 16           | 16   | " ...                  | " ...     | 1,032   | " ...       | "        | Nil.                              | "           |  |
| "     | 3 ...  | 39.1            | 39.5   | 39.4   | 60     | 60   | 40           | 24   | " ...                  | Turbid    | 1,028   | " ...       | 1/40     | "                                 | "           |  |
| "     | 4 ...  | 38.7            | 38.5   | 39.8   | 64     | 64   | 16           | 24   | " ...                  | " ...     | 1,024   | " ...       | 1/28     | "                                 | "           |  |
| "     | 5 ...  | 38.1            | 38.6   | 39.3   | 60     | 64   | 20           | 16   | " ...                  | Clear ... | 1,028   | " ...       | Nil.     | "                                 | "           |  |
| "     | 6 ...  | 38.6            | 38.7   | 39.3   | 56     | 60   | 14           | 20   | " ...                  | " ...     | 1,030   | " ...       | Trace.   | "                                 | "           |  |
| "     | 7 ...  | 38.5            | 38.5   | 39.4   | 60     | 64   | 20           | 24   | " ...                  | " ...     | 1,028   | " ...       | 1/50     | "                                 | "           |  |
| "     | 8 ...  | 38.7            | 38.4   | 39.2   | 64     | 64   | 16           | 16   | " ...                  | " ...     | 1,036   | " ...       | Trace.   | "                                 | "           |  |
| "     | 9 ...  | 37.8            | 38.8   | 39.5   | 52     | 60   | 16           | 20   | " ...                  | " ...     | 1,046   | " ...       | 1/40     | "                                 | "           |  |
| "     | 10 ... | 37.6            | 38.2   | 38.6   | 60     | 64   | 16           | 16   | " ...                  | Turbid    | 1,018   | " ...       | 1/44     | "                                 | "           |  |
| "     | 11 ... | 37.2            | 38.2   | 38.7   | 44     | 56   | 12           | 12   | " ...                  | Clear ... | 1,054   | " ...       | Trace.   | 1/26                              | "           |  |
| "     | 12 ... | 37.3            | 37.4   | 38.3   | 56     | 60   | 12           | 16   | " ...                  | Turbid    | 1,030   | " ...       | Nil.     | Nil.                              | "           |  |
| "     | 13 ... | 38.3            | 38.0   | 39.0   | 60     | 60   | 12           | 16   | " ...                  | Clear ... | 1,032   | " ...       | 1/32     | "                                 | "           |  |
| "     | 14 ... | 38.7            | 38.2   | 39.7   | 48     | 54   | 16           | 20   | " ...                  | Turbid    | 1,048   | " ...       | Trace.   | "                                 | "           |  |
| "     | 15 ... | 37.8            | 38.5   | 39.4   | 60     | 64   | 16           | 16   | " ...                  | " ...     | 1,022   | " ...       | "        | Trace.                            | "           |  |
| "     | 16 ... | 38.1            | 37.0   | 39.0   | 64     | 64   | 16           | 12   | " ...                  | Clear ... | 1,028   | " ...       | 1/40     | Nil.                              | "           |  |
| "     | 17 ... | 37.2            | 38.0   | 39.8   | 60     | 64   | 12           | 24   | " ...                  | " ...     | 1,034   | " ...       | 1/32     | "                                 | "           |  |
| "     | 18 ... | 38.0            | 37.7   | 40.3   | 64     | 64   | 16           | 16   | " ...                  | " ...     | 1,032   | " ...       | 1/20     | "                                 | "           |  |
| "     | 19 ... | 38.2            | 38.5   | 40.2   | 60     | 64   | 14           | 24   | " ...                  | Turbid    | 1,030   | " ...       | 1/20     | "                                 | "           |  |
| "     | 20 ... | 38.3            | 38.1   | 39.4   | 64     | 64   | 16           | 20   | " ...                  | " ...     | 1,034   | " ...       | 1/35     | "                                 | "           |  |
| "     | 21 ... | 38.0            | 38.1   | 39.7   | 60     | 64   | 12           | 24   | " ...                  | Clear ... | 1,048   | " ...       | 1/20     | 1/18                              | "           |  |
| "     | 22 ... | 38.3            | 38.3   | 40.0   | 64     | 64   | 20           | 24   | " ...                  | Turbid    | 1,036   | " ...       | 1/30     | Nil.                              | "           |  |
| "     | 23 ... | 38.3            | 38.3   | 40.2   | 64     | 64   | 16           | 24   | " ...                  | Clear ... | 1,018   | " ...       | 1/50     | "                                 | "           |  |
| "     | 24 ... | 38.5            | 39.2   | 40.2   | 64     | 64   | 16           | 20   | " ...                  | " ...     | 1,038   | " ...       | Trace.   | "                                 | "           |  |
| "     | 25 ... | 38.1            | 38.4   | 39.7   | 60     | 64   | 16           | 20   | " ...                  | Turbid    | 1,034   | " ...       | Nil.     | "                                 | "           |  |
| "     | 26 ... | 38.3            | 37.7   | 39.8   | 60     | 64   | 16           | 20   | " ...                  | " ...     | 1,034   | " ...       | 1/48     | "                                 | "           |  |
| "     | 27 ... | 38.5            | 38.2   | 39.5   | 64     | 64   | 20           | 20   | " ...                  | " ...     | 1,030   | " ...       | Trace.   | "                                 | "           |  |
| "     | 28 ... | 38.2            | 38.5   | 39.7   | 60     | 64   | 16           | 20   | " ...                  | " ...     | 1,034   | " ...       | 1/18     | "                                 | "           |  |
| "     | 29 ... | 38.2            | 38.5   | 39.8   | 64     | 64   | 16           | 16   | " ...                  | " ...     | 1,038   | " ...       | 1/52     | "                                 | "           |  |
| "     | 30 ... | 38.4            | 38.5   | 39.6   | 64     | 64   | 16           | 20   | " ...                  | " ...     | 1,048   | " ...       | 1/40     | 1/16                              | "           |  |
| Decr. | 1 ...  | 37.6            | 38.5   | 40.1   | 64     | 64   | 16           | 20   | " ...                  | Clear ... | 1,032   | " ...       | 1/42     | Nil.                              | "           |  |
| "     | 2 ..   | 37.8            | 38.0   | 39.1   | 64     | 64   | 20           | 20   | " ...                  | " ...     | 1,042   | " ...       | 1/34     | "                                 | "           |  |
| "     | 3 ...  | 37.6            | 38.6   | 39.0   | 64     | 64   | 16           | 16   | " ...                  | Turbid    | 1,052   | " ...       | Trace.   | "                                 | "           |  |
| "     | 4 ...  | 37.8            | 38.7   | 40.1   | 56     | 64   | 20           | 28   | " ...                  | " ...     | 1,032   | " ...       | "        | 1/18                              | "           |  |
| "     | 5 ...  | 37.3            | 38.4   | 40.0   | 56     | 64   | 16           | 24   | " ...                  | Clear ... | 1,032   | " ...       | Nil.     | Nil.                              | "           |  |
| "     | 6 ...  | 37.6            | 38.4   | 39.3   | 60     | 64   | 12           | 12   | " ...                  | " ...     | 1,010   | " ...       | "        | "                                 | "           |  |
| "     | 7 ...  | 38.1            | 38.8   | 39.4   | 56     | 64   | 16           | 16   | " ...                  | " ...     | 1,010   | " ...       | "        | "                                 | "           |  |
| "     | 8 ...  | 36.3            | 38.4   | 39.6   | 44     | 64   | 12           | 20   | " ...                  | " ...     | 1,044   | " ...       | "        | "                                 | "           |  |
| "     | 9 ...  | 37.4            | 37.4   | 39.3   | 48     | 64   | 12           | 16   | " ...                  | " ...     | 1,018   | " ...       | Trace.   | "                                 | "           |  |
| "     | 10 ... | 37.7            | 38.5   | 39.3   | 48     | 60   | 16           | 12   | " ...                  | " ...     | 1,053   | " ...       | 1/50     | 1/18                              | "           |  |
| "     | 11 ... | 38.1            | 38.8   | 39.5   | 48     | 60   | 12           | 12   | " ...                  | Turbid    | 1,028   | " ...       | Nil.     | Nil.                              | "           |  |
| "     | 12 ... | 38.3            | 39.1   | 39.8   | 64     | 64   | 12           | 12   | " ...                  | Clear ... | 1,026   | " ...       | "        | "                                 | "           |  |
| "     | 13 ... | 37.8            | 38.5   | 39.4   | 56     | 64   | 16           | 16   | " ...                  | " ...     | 1,030   | " ...       | "        | "                                 | "           |  |
| "     | 14 ... | 38.0            | 39.6   | 40.0   | 52     | 60   | 12           | 12   | " ...                  | " ...     | 1,035   | " ...       | "        | "                                 | "           |  |
| "     | 15 ... | 37.4            | 38.2   | 39.0   | 56     | 64   | 12           | 16   | " ...                  | " ...     | 1,040   | " ...       | 1/35     | "                                 | "           |  |
| "     | 16 ... | 37.7            | 37.8   | 39.4   | 48     | 56   | 12           | 16   | " ...                  | " ...     | 1,032   | " ...       | "        | "                                 | "           |  |
| "     | 17 ... | 38.1            | 38.7   | 39.5   | 56     | 60   | 16           | 16   | " ...                  | " ...     | 1,028   | " ...       | "        | "                                 | "           |  |
| "     | 18 ... | 38.3            | 39.0   | 39.3   | 52     | 60   | 16           | 16   | " ...                  | Turbid    | 1,018   | " ...       | Trace.   | "                                 | "           |  |
| "     | 19 ... | 38.2            | 39.1   | 39.2   | 52     | 64   | 12           | 16   | " ...                  | " ...     | 1,020   | " ...       | "        | "                                 | "           |  |
| "     | 20 ..  | 38.2            | 38.5   | 39.2   | 48     | 56   | 12           | 16   | " ...                  | " ...     | 1,022   | " ...       | Nil.     | "                                 | "           |  |
| "     | 21 ... | 37.7            | 38.5   | 38.7   | 52     | 52   | 12           | 16   | " ...                  | Clear ... | 1,008   | " ...       | "        | "                                 | "           |  |
| "     | 22 ... | 36.3            | 37.7   | 38.7   | 44     | 60   | 16           | 12   | " ...                  | Turbid... | 1,028   | " ...       | 1/30     | "                                 | "           |  |
| "     | 23 ... | 37.6            | 38.7   | 40.0   | 52     | 60   | 12           | 12   | " ...                  | Clear ... | 1,046   | " ...       | 1/20     | Trace<br>of bile<br>pig-<br>ment. | "           |  |
| "     | 24 ... | 37.4            | 38.5   | 39.6   | 48     | 64   | 12           | 12   | " ...                  | Turbid    | 1,044   | " ...       | 1/27     | "                                 | "           |  |
| "     | 25 ... | 38.2            | 38.6   | 39.2   | 56     | 60   | 16           | 16   | " ...                  | " ...     | 1,026   | " ...       | Nil.     | "                                 | "           |  |
| "     | 26 ... | 37.6            | 38.4   | 39.4   | 52     | 60   | 12           | 12   | " ...                  | " ...     | 1,034   | " ...       | 1/35     | "                                 | "           |  |
| "     | 27 ... | 38.1            | 37.8   | 39.2   | 56     | 56   | 12           | 12   | " ...                  | " ...     | 1,010   | " ...       | 1/30     | "                                 | "           |  |
| "     | 28 ... | 37.8            | 38.8   | 39.4   | 52     | 64   | 16           | 20   | " ...                  | " ...     | 1,042   | " ...       | Nil.     | "                                 | "           |  |
| "     | 29 ... | 38.6            | 38.7   | 40.0   | 52     | 52   | 12           | 16   | " ...                  | Clear ... | 1,046   | " ...       | "        | "                                 | "           |  |
| "     | 30 ... | 37.8            | 38.1   | 39.1   | 52     | 56   | 12           | 16   | " ...                  | " ...     | 1,041   | " ...       | "        | "                                 | "           |  |
| "     | 31 ... | 37.6            | 38.7   | 39.1   | 52     | 52   | 16           | 16   | " ...                  | " ...     | 1,038   | " ...       | "        | "                                 | "           |  |



| Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.   |           |           |             |          |             |      |
|-------|-----------------|--------|--------|--------|------|--------------|------|------------------------|----------|-----------|-----------|-------------|----------|-------------|------|
|       | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour.  | Sp. Gr.   | Reaction. | Albumen.    | H. Acid. | Phosphates. |      |
| 1893. |                 |        |        |        |      |              |      |                        |          |           |           |             |          |             |      |
| Jan.  | 1 ...           | 37.4   | 38.6   | 39.5   | 52   | 56           | 12   | 16                     | Absent . | Clear ... | 1.035     | Alkaline... | Nil.     | Nil         | Nil. |
| "     | 2 ...           | 37.7   | 37.4   | 39.3   | 52   | 64           | 12   | 12                     | " ...    | " ...     | 1.026     | " ...       | "        | "           | "    |
| "     | 3 ...           | 37.6   | 38.0   | 38.8   | 48   | 56           | 12   | 14                     | " ...    | " ...     | 1.030     | " ...       | "        | "           | "    |
| "     | 4 ...           | 37.8   | 39.1   | 38.5   | 48   | 64           | 12   | 16                     | " ...    | Turbid .  | 1.034     | " ...       | "        | "           | "    |
| "     | 5 ...           | 38.3   | 38.8   | 39.3   | 52   | 60           | 12   | 12                     | " ...    | " ...     | 1.036     | " ..        | 1/40     | "           | "    |
| "     | 6 ...           | 38.4   | 38.3   | 39.1   | 42   | 56           | 16   | 16                     | " ...    | Clear ... | 1.022     | " ...       | Nil.     | "           | "    |
| "     | 7 ...           | 38.0   | 38.4   | 38.8   | 44   | 48           | 16   | 16                     | " ...    | " ...     | 1.024     | " ...       | 1/48     | "           | "    |
| "     | 8 ...           | 37.7   | 38.2   | 39.0   | 48   | 48           | 12   | 12                     | " ...    | " ...     | 1.026     | " ..        | 1/42     | "           | "    |
| "     | 9 ...           | 37.7   | 38.6   | 38.7   | 40   | 60           | 12   | 12                     | " ...    | " ...     | 1.024     | " ...       | Nil.     | "           | "    |
| "     | 10 ...          | 38.3   | 37.8   | 39.0   | 52   | 48           | 16   | 12                     | " ...    | " ...     | 1.050     | " ...       | "        | "           | "    |
| "     | 11 ...          | 37.4   | 37.4   | 38.4   | 40   | 56           | 16   | 16                     | " ..     | " ...     | 1.028     | " ...       | 1/42     | "           | "    |
| "     | 12 ...          | 37.2   | 37.7   | 38.7   | 52   | 52           | 12   | 12                     | " ...    | " ...     | 1.026     | " ...       | Nil.     | "           | "    |
| "     | 13 ...          | 37.1   | 38.4   | 39.4   | 44   | 60           | 12   | 12                     | " ...    | " ...     | 1.030     | " ...       | 1/80     | "           | "    |
| "     | 14 ...          | 37.3   | 37.3   | 39.2   | 56   | 64           | 12   | 12                     | " ...    | Turbid .  | 1.018     | " ...       | Nil.     | "           | "    |
| "     | 15 ...          | 37.5   | 38.0   | 39.3   | 44   | 56           | 12   | 16                     | " ...    | Clear ... | 1.012     | " ...       | "        | "           | "    |
| "     | 16 ..           | 38.2   | 38.7   | 39.3   | 48   | 52           | 12   | 16                     | " ...    | " ...     | 1.023     | " ...       | "        | "           | "    |
| "     | 17 ...          | 37.2   | 37.4   | 39.2   | 48   | 60           | 12   | 16                     | " ...    | " ...     | 1.032     | " ...       | "        | "           | "    |
| "     | 18 ...          | 38.0   | 38.8   | 39.6   | 44   | 64           | 16   | 12                     | " ...    | " ..      | 1.040     | " ...       | 1/40     | "           | "    |
| "     | 19 ...          | 37.7   | 38.4   | 39.3   | 52   | 56           | 12   | 12                     | " ...    | " ...     | 1.034     | " ...       | Nil.     | "           | "    |
| "     | 20 ...          | 37.5   | 38.5   | 39.3   | 52   | 60           | 12   | 12                     | " ...    | " ...     | 1.032     | " ...       | "        | "           | "    |
| "     | 21 ...          | 37.6   | 38.7   | 39.3   | 52   | 64           | 12   | 16                     | " ...    | Turbid .  | 1.034     | " ...       | 1/52     | "           | "    |
| "     | 22 ...          | 37.2   | 38.3   | 39.4   | 44   | 52           | 12   | 16                     | " ..     | Clear ... | 1.042     | " ...       | 1/46     | "           | "    |
| "     | 23 ...          | 37.4   | 38.3   | 39.1   | 52   | 64           | 12   | 12                     | " ...    | " ...     | 1.030     | " ...       | "        | "           | "    |
| "     | 24 ...          | 37.8   | 38.4   | 39.4   | 60   | 64           | 12   | 12                     | " ...    | Turbid .  | 1.024     | " ...       | Trace.   | "           | "    |
| "     | 25 ...          | 36.5   | 37.8   | 39.4   | 56   | 64           | 12   | 16                     | " ...    | " ...     | 1.030     | " ...       | "        | "           | "    |
| "     | 26 ...          | 36.7   | 37.3   | 38.6   | 48   | 56           | 12   | 16                     | " ...    | Clear ... | 1.028     | " ...       | "        | "           | "    |
| "     | 27 ...          | 36.5   | 38.2   | 40.5   | 56   | 56           | 12   | 12                     | " ...    | " ...     | 1.026     | " ...       | "        | "           | "    |
| "     | 28 ...          | 37.0   | 38.5   | 39.4   | 56   | 60           | 12   | 12                     | " ...    | " ...     | 1.030     | " ...       | "        | "           | "    |
| "     | 29 ...          | 37.4   | 38.1   | 39.5   | 52   | 64           | 12   | 12                     | " ...    | " ...     | 1.034     | " ...       | "        | Trace.      | "    |
| "     | 30 ...          | 37.4   | 38.3   | 39.2   | 52   | 60           | 12   | 12                     | " ...    | " ...     | 1.032     | " ...       | "        | "           | "    |
| "     | 31 ...          | 37.1   | 38.3   | 39.2   | 52   | 56           | 12   | 12                     | " ...    | Turbid .  | 1.036     | " ...       | "        | Nil.        | "    |
| Feb.  | 1 ...           | 36.3   | 38.0   | 39.1   | 44   | 52           | 12   | 12                     | " ...    | " ...     | 1.032     | " ...       | "        | "           | "    |
| "     | 2 ...           | 36.5   | 37.4   | 39.1   | 40   | 60           | 12   | 12                     | " ...    | Clear ... | 1.025     | " ...       | "        | "           | "    |
| "     | 3 ...           | 37.1   | 36.4   | 38.3   | 44   | 60           | 12   | 12                     | " ...    | Turbid .  | 1.018     | " ...       | 1/42     | "           | "    |
| "     | 4 ...           | 37.4   | 37.7   | 39.3   | 48   | 56           | 12   | 16                     | " ...    | " ...     | 1.038     | " ...       | 1/40     | "           | "    |
| "     | 5 ...           | 37.8   | 38.2   | 39.3   | 48   | 56           | 12   | 12                     | " ...    | " ...     | 1.034     | " ...       | Trace.   | "           | "    |
| "     | 6 ...           | 38.1   | 38.8   | 38.5   | 52   | 56           | 12   | 12                     | " ...    | " ...     | 1.028     | " ...       | 1/80     | Trace.      | "    |
| "     | 7 ...           | 37.6   | 38.3   | 38.3   | 48   | 48           | 12   | 16                     | " ...    | " ...     | 1.030     | " ...       | Nil.     | "           | "    |
| "     | 8 ...           | 36.8   | 37.6   | 38.8   | 44   | 48           | 12   | 12                     | " ...    | " ...     | 1.037     | " ...       | "        | Nil.        | "    |
| "     | 9 ...           | 36.0   | 37.6   | 38.7   | 44   | 52           | 12   | 12                     | " ...    | " ...     | 1.040     | " ...       | 1/54     | Trace.      | "    |

As it is now 197 days since the animal was subjected to the injection of rat (*Mus decumanus*) blood, and 121 days since the appearance of the hæmatozoon in the blood on the 11th October 1892, it was decided to re-inoculate with virulent Surra blood in order to test whether any protection had been acquired from the previous one, consequently the animal was subcutaneously inoculated at 5.30 P.M. with 2 c.c. of blood, containing numerous hæmatozoa drawn from the jugular vein of Horse No. LXXXIV immediately after death.

" 10 ... | 36.7 | 38.5 | 39.3 | 44 | 56 | 8 | 12 | " ... | " ... | 1.026 | " ... | 1/50 | " | "

No change at seat of inoculation.

" 11 ... | 37.2 | 38.1 | 39.4 | 44 | 60 | 12 | 12 | " ... | " ... | 1.034 | " ... | Nil. | " | "

" 12 ... | 37.7 | 39.3 | 39.4 | 56 | 52 | 12 | 16 | " ... | Clear ... | 1.028 | " ... | 1/30 | " | "

" 13 ... | 38.1 | 38.7 | 40.0 | 48 | 52 | 12 | 12 | " ... | Turbid . | 1.024 | " ... | 1/80 | " | "

" 14 ... | 39.0 | 38.7 | 42.1 | 56 | 64 | 12 | 16 | " ... | " ... | 1.026 | " ... | Trace | " | "

Noon.—The muzzle is dry, skin hot, and pulse increased in frequency, and the temperature had risen at 5 P.M. 3.4 °C.

" 15 ... | 40.3 | 41.1 | 41.5 | 72 | 76 | 12 | 12 | " ... | Turbid . | 1.027 | " ... | Trace. | " | "

The animal again presents a normal appearance.

" 16 ... | 39.5 | 40.5 | 40.5 | 64 | 64 | 16 | 16 | " ... | " ... | 1.024 | " ... | " | " | "

" 17 ... | 38.1 | 39.1 | 39.5 | 48 | 68 | 12 | 16 | " ... | Clear ... | 1.029 | " ... | 1/75 | " | "

" 18 ... | 37.5 | 38.5 | 38.5 | 44 | 64 | 16 | 12 | " ... | Turbid . | 1.026 | " ... | 1/60 | " | "

" 19 ... | 37.3 | 38.4 | 39.3 | 52 | 56 | 12 | 16 | " ... | Clear ... | 1.024 | " ... | Nil. | " | "

" 20 ... | 38.8 | 38.6 | 39.3 | 52 | 64 | 12 | 16 | " ... | Turbid . | 1.030 | " ... | " | " | "

" 21 ... | 38.2 | 38.0 | 39.0 | 52 | 56 | 16 | 12 | " ... | Clear ... | 1.022 | " ... | Trace. | " | "

" 22 ... | 38.0 | 38.3 | 38.5 | 52 | 56 | 12 | 12 | " ... | " ... | 1.014 | " ... | Nil. | " | "

| Date. |    |     | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hamatozoa<br>in Blood. | Urine.  |         |             |          |          |             |
|-------|----|-----|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|-------------|----------|----------|-------------|
|       |    |     | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction.   | Albumen. | H. Acid. | Phosphates. |
| 1893. |    |     |                 |        |        |        |      |              |      |                        |         |         |             |          |          |             |
| Feb.  | 23 | ... | 38.2            | 37.6   | 39.2   | 56     | 60   | 16           | 16   | Absent.                | Clear   | 1,022   | Alkaline... | Nil      | Nil      | Nil         |
| "     | 24 | ... | 38.5            | 38.8   | 39.2   | 56     | 60   | 12           | 16   | "                      | "       | 1,032   | "           | "        | "        | "           |
| "     | 25 | ... | 38.1            | 38.0   | 39.8   | 56     | 52   | 24           | 16   | "                      | Turbid  | 1,016   | "           | "        | "        | "           |
| "     | 26 | ... | 38.0            | 38.0   | 39.5   | 60     | 72   | 12           | 16   | "                      | Clear   | 1,026   | "           | 1/68     | "        | "           |
| "     | 27 | ... | 37.0            | 38.3   | 39.4   | 60     | 64   | 12           | 20   | "                      | "       | 1,026   | "           | 1/70     | "        | "           |
| "     | 28 | ... | 38.0            | 38.1   | 39.1   | 52     | 60   | 12           | 12   | "                      | "       | 1,040   | "           | 1/80     | "        | "           |
| March | 1  | ... | 38.1            | 38.6   | 38.7   | 60     | 50   | 12           | 20   | "                      | "       | 1,036   | "           | Trace.   | "        | "           |
| "     | 2  | ... | 38.1            | 38.1   | 39.1   | 56     | 56   | 16           | 12   | "                      | "       | 1,035   | "           | Nil      | "        | "           |
| "     | 3  | ... | 37.7            | 38.0   | 39.2   | 48     | 56   | 12           | 16   | "                      | Turbid  | 1,026   | "           | Trace.   | "        | "           |
| "     | 4  | ... | 37.2            | 38.0   | 39.0   | 48     | 52   | 12           | 12   | "                      | "       | 1,028   | "           | Nil      | "        | "           |
| "     | 5  | ... | 37.8            | 38.3   | 39.1   | 52     | 60   | 12           | 12   | "                      | "       | 1,026   | "           | "        | "        | "           |
| "     | 6  | ... | 38.1            | 38.4   | 38.7   | 48     | 52   | 16           | 12   | "                      | Clear   | 1,030   | Neutral...  | Trace.   | "        | "           |
| "     | 7  | ... | 37.0            | 38.2   | 39.3   | 52     | 52   | 16           | 16   | "                      | "       | 1,048   | Alkaline... | "        | "        | "           |
| "     | 8  | ... | 37.8            | 38.4   | 39.1   | 44     | 53   | 12           | 12   | "                      | "       | 1,024   | "           | 1/80     | "        | "           |
| "     | 9  | ... | 38.0            | 38.7   | 39.3   | 60     | 60   | 16           | 12   | "                      | "       | 1,025   | "           | 1/50     | "        | "           |
| "     | 10 | ... | 37.7            | 38.0   | 39.1   | 44     | 56   | 12           | 16   | "                      | "       | 1,016   | "           | Nil      | "        | "           |
| "     | 11 | ... | 37.4            | 38.3   | 39.1   | 52     | 56   | 12           | 12   | "                      | "       | 1,046   | "           | 1/54     | "        | "           |
| "     | 12 | ... | 37.7            | 38.4   | 39.1   | 52     | 64   | 12           | 16   | "                      | "       | 1,022   | "           | Nil      | "        | "           |
| "     | 13 | ... | 37.8            | 38.4   | 39.0   | 48     | 64   | 12           | 12   | "                      | Turbid  | 1,034   | "           | Trace.   | Trace.   | "           |
| "     | 14 | ... | 38.0            | 38.3   | 39.5   | 52     | 56   | 12           | 12   | "                      | Clear   | 1,054   | "           | 1/84     | "        | "           |
| "     | 15 | ... | 38.3            | 38.0   | 39.2   | 44     | 52   | 12           | 12   | "                      | Turbid  | 1,040   | "           | Trace.   | Nil      | "           |
| "     | 16 | ... | 38.0            | 38.7   | 39.7   | 56     | 60   | 16           | 12   | "                      | "       | 1,050   | "           | 1/62     | "        | "           |
| "     | 17 | ... | 38.2            | 38.8   | 39.7   | 52     | 56   | 12           | 16   | "                      | "       | 1,036   | Neutral...  | 1/80     | 1/9      | "           |
| "     | 18 | ... | 38.3            | 38.4   | 39.0   | 52     | 56   | 12           | 20   | "                      | Clear   | 1,018   | "           | Nil      | Nil      | "           |
| "     | 19 | ... | 38.3            | 38.3   | 39.1   | 48     | 60   | 12           | 16   | "                      | Turbid  | 1,018   | Alkaline..  | "        | "        | "           |
| "     | 20 | ... | 37.0            | 38.0   | 39.0   | 40     | 52   | 12           | 16   | "                      | Clear   | 1,020   | Acid        | 1/46     | 1/15     | "           |
| "     | 21 | ... | 37.3            | 37.4   | 38.6   | 48     | 48   | 12           | 12   | "                      | Turbid  | 1,046   | "           | 1/52     | 1/18     | "           |
| "     | 22 | ... | 37.1            | 37.8   | 38.5   | 44     | 48   | 12           | 12   | "                      | "       | 1,032   | "           | Nil      | 1/8      | "           |
| "     | 23 | ... | 37.3            | 38.5   | 38.2   | 44     | 44   | 12           | 14   | "                      | "       | 1,054   | "           | Trace.   | 1/18     | "           |
| "     | 24 | ... | 37.4            | 38.0   | 39.0   | 44     | 52   | 16           | 16   | "                      | "       | 1,049   | "           | "        | 1/21     | "           |
| "     | 25 | ... | 38.1            | 38.4   | 39.1   | 44     | 48   | 16           | 16   | "                      | Clear   | 1,016   | Neutral...  | Nil      | Nil      | "           |
| "     | 26 | ... | 38.0            | 38.4   | 39.2   | 48     | 52   | 12           | 12   | "                      | "       | 1,026   | Acid        | "        | 1/9      | "           |
| "     | 27 | ... | 37.3            | 38.8   | 39.4   | 48     | 52   | 12           | 16   | "                      | Turbid  | 1,040   | "           | "        | 1/9      | "           |
| "     | 28 | ... | 38.2            | 38.5   | 39.3   | 44     | 56   | 16           | 16   | "                      | Clear   | 1,042   | Alkaline... | "        | Nil      | "           |
| "     | 29 | ... | 37.8            | 38.6   | 39.6   | 44     | 68   | 16           | 16   | "                      | Turbid  | 1,046   | "           | Trace.   | "        | "           |
| "     | 30 | ... | 38.1            | 38.7   | 39.8   | 44     | 68   | 12           | 20   | "                      | Clear   | 1,032   | Neutral...  | Nil      | "        | "           |
| "     | 31 | ... | 38.0            | 38.7   | 39.6   | 48     | 52   | 16           | 20   | "                      | Turbid  | 1,050   | Alkaline... | Trace.   | "        | "           |
| April | 1  | ... | 38.3            | 39.1   | 40.0   | 52     | 64   | 16           | 24   | "                      | Clear   | 1,026   | Neutral...  | Nil      | "        | "           |
| "     | 2  | ... | 38.3            | 38.8   | 39.2   | 52     | 60   | 16           | 16   | "                      | "       | 1,030   | "           | Trace.   | "        | "           |
| "     | 3  | ... | 38.2            | 39.2   | 39.3   | 44     | 64   | 24           | 24   | "                      | Turbid  | 1,024   | Alkaline... | Nil      | "        | "           |
| "     | 4  | ... | 37.8            | 38.7   | 39.4   | 48     | 52   | 20           | 20   | "                      | Clear   | 1,040   | "           | "        | "        | "           |
| "     | 5  | ... | 38.0            | 39.4   | 39.8   | 44     | 60   | 16           | 28   | "                      | Turbid  | 1,026   | "           | "        | "        | "           |
| "     | 6  | ... | 37.7            | 38.7   | 39.1   | 48     | 52   | 16           | 24   | "                      | "       | 1,016   | "           | "        | "        | "           |
| "     | 7  | ... | 38.0            | 38.6   | 39.5   | 40     | 52   | 20           | 24   | "                      | "       | 1,040   | "           | "        | "        | "           |
| "     | 8  | ... | 37.7            | 38.8   | 39.5   | 40     | 56   | 12           | 20   | "                      | "       | 1,028   | "           | "        | "        | "           |
| "     | 9  | ... | 37.8            | 39.0   | 39.3   | 40     | 56   | 16           | 24   | "                      | Clear   | 1,032   | Neutral...  | "        | "        | "           |
| "     | 10 | ... | 38.4            | 39.1   | 39.6   | 48     | 48   | 16           | 24   | "                      | Turbid  | 1,016   | Alkaline... | "        | "        | "           |
| "     | 11 | ... | 38.3            | 38.7   | 39.3   | 40     | 48   | 16           | 20   | "                      | "       | 1,012   | "           | "        | "        | "           |
| "     | 12 | ... | 38.2            | 39.3   | 38.7   | 44     | 52   | 24           | 12   | "                      | "       | 1,018   | "           | "        | "        | "           |
| "     | 13 | ... | 38.5            | 39.0   | 39.1   | 48     | 48   | 12           | 20   | "                      | "       | 1,018   | "           | "        | "        | "           |
| "     | 14 | ... | 37.7            | 38.4   | 39.2   | 44     | 48   | 12           | 20   | "                      | "       | 1,028   | "           | "        | "        | "           |
| "     | 15 | ... | 37.8            | 38.8   | 39.3   | 40     | 52   | 20           | 12   | "                      | "       | 1,028   | "           | "        | "        | "           |
| "     | 16 | ... | 38.1            | 38.5   | 38.8   | 48     | 52   | 12           | 12   | "                      | "       | 1,024   | "           | "        | "        | "           |
| "     | 17 | ... | 37.4            | 38.3   | 39.0   | 40     | 52   | 18           | 20   | "                      | "       | 1,022   | "           | "        | "        | "           |
| "     | 18 | ... | 37.7            | 38.5   | 39.5   | 48     | 60   | 16           | 20   | "                      | "       | 1,030   | "           | "        | "        | "           |
| "     | 19 | ... | 37.6            | 38.1   | 39.6   | 40     | 52   | 12           | 12   | "                      | "       | 1,024   | "           | "        | "        | "           |
| "     | 20 | ... | 38.3            | 39.0   | 39.8   | 48     | 52   | 20           | 20   | "                      | "       | 1,030   | "           | "        | "        | "           |
| "     | 21 | ... | 37.5            | 38.7   | 39.3   | 52     | 52   | 16           | 12   | "                      | "       | 1,044   | "           | "        | "        | "           |
| "     | 22 | ... | 37.4            | 38.3   | 38.8   | 48     | 56   | 12           | 12   | "                      | "       | 1,026   | "           | "        | "        | "           |
| "     | 23 | ... | 37.7            | 37.7   | 39.2   | 44     | 60   | 12           | 16   | "                      | Clear   | 1,030   | "           | "        | "        | "           |
| "     | 24 | ... | 37.6            | 38.8   | 38.7   | 52     | 60   | 16           | 24   | "                      | Turbid  | 1,030   | "           | "        | "        | "           |
| "     | 25 | ... | 37.7            | 38.8   | 38.8   | 44     | 39   | 16           | 14   | "                      | Clear   | 1,030   | "           | "        | "        | "           |
| "     | 26 | ... | 37.7            | 38.5   | 39.4   | 40     | 49   | 12           | 16   | "                      | Turbid  | 1,030   | "           | "        | "        | "           |
| "     | 27 | ... | 37.4            | 38.7   | 39.4   | 40     | 48   | 12           | 18   | "                      | Clear   | 1,018   | "           | "        | "        | "           |
| "     | 28 | ... | 37.6            | 38.6   | 39.0   | 44     | 48   | 12           | 16   | "                      | "       | 1,022   | "           | "        | "        | "           |
| "     | 29 | ... | 37.5            | 38.6   | 38.7   | 44     | 38   | 12           | 18   | "                      | "       | 1,022   | "           | "        | "        | "           |
| "     | 30 | ... | 37.4            | 38.7   | 39.7   | 44     | 36   | 16           | 30   | Few                    | "       | 1,027   | "           | "        | "        | "           |
| May   | 1  | ... | 38.2            | 39.5   | 38.8   | 48     | 60   | 16           | 32   | "                      | Turbid  | 1,038   | "           | "        | "        | "           |
| "     | 2  | ... | 37.7            | 38.5   | 38.8   | 52     | 56   | 16           | 16   | Absent                 | "       | 1,032   | "           | "        | "        | "           |
| "     | 3  | ... | 37.4            | 38.6   | 39.1   | 48     | 60   | 12           | 28   | "                      | "       | 1,020   | "           | "        | "        | "           |
| "     | 4  | ... | 37.6            | 38.4   | 39.1   | 52     | 60   | 16           | 24   | "                      | Clear   | 1,009   | "           | "        | "        | "           |
| "     | 5  | ... | 37.8            | 39.0   | 39.3   | 52     | 52   | 20           | 12   | "                      | "       | 1,020   | "           | "        | "        | "           |



| Date.                            |    |     | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |             |          |          |             |
|----------------------------------|----|-----|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|-------------|----------|----------|-------------|
|                                  |    |     | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction.   | Albumen. | H. Acid. | Phosphates. |
| 1893.                            |    |     |                 |        |        |        |      |              |      |                        |         |         |             |          |          |             |
| May                              | 6  | ... | 37.8            | 38.0   | 39.1   | 48     | 60   | 16           | 20   | Absent                 | Turbid  | 1,020   | Neutral ... | Nil      | 1/15     | Nil         |
| "                                | 7  | ... | 37.7            | 38.5   | 39.3   | 40     | 48   | 16           | 16   | "                      | Clear   | 1,008   | Alkaline... | "        | Nil      | "           |
| "                                | 8  | ... | 37.5            | 38.2   | 39.0   | 56     | 52   | 12           | 20   | "                      | Turbid  | 1,010   | "           | "        | "        | "           |
| "                                | 9  | ... | 37.0            | 38.2   | 39.0   | 48     | 48   | 16           | 28   | "                      | "       | 1,016   | "           | "        | "        | "           |
| "                                | 10 | ... | 37.4            | 38.4   | 38.7   | 44     | 56   | 16           | 28   | "                      | Clear   | 1,010   | "           | "        | "        | "           |
| "                                | 11 | ... | 37.1            | 38.8   | 39.6   | 44     | 52   | 16           | 20   | "                      | "       | 1,016   | "           | "        | Trace.   | "           |
| "                                | 12 | ... | 37.7            | 38.6   | 39.3   | 40     | 48   | 16           | 20   | "                      | "       | 1,032   | "           | "        | "        | "           |
| "                                | 13 | ... | 37.6            | 38.2   | 39.0   | 48     | 64   | 16           | 20   | "                      | Turbid  | 1,030   | "           | "        | Nil      | "           |
| "                                | 14 | ... | 37.7            | 38.4   | 39.2   | 52     | 56   | 16           | 24   | "                      | "       | 1,018   | "           | Trace.   | "        | "           |
| "                                | 15 | ... | 38.1            | 38.3   | 39.0   | 44     | 64   | 20           | 28   | "                      | Clear   | 1,030   | "           | Nil      | 1/20     | "           |
| "                                | 16 | ... | 37.8            | 38.0   | 39.2   | 40     | 52   | 20           | 20   | "                      | "       | 1,032   | "           | "        | 1/24     | "           |
| "                                | 17 | ... | 37.8            | 39.2   | 40.5   | 44     | 64   | 16           | 40   | "                      | "       | 1,022   | "           | "        | Trace.   | "           |
| 17th.—Slight constipation.       |    |     |                 |        |        |        |      |              |      |                        |         |         |             |          |          |             |
| "                                | 18 | ... | 38.2            | 38.6   | 39.4   | 44     | 64   | 20           | 32   | "                      | "       | 1,040   | "           | "        | 1/15     | "           |
| "                                | 19 | ... | 38.2            | 38.0   | 39.0   | 48     | 52   | 24           | 24   | "                      | "       | 1,020   | "           | "        | Trace.   | "           |
| "                                | 20 | ... | 37.6            | 37.8   | 38.8   | 52     | 52   | 16           | 24   | "                      | "       | 1,040   | "           | "        | 1/16     | "           |
| "                                | 21 | ... | 37.1            | 38.5   | 39.1   | 48     | 56   | 16           | 20   | "                      | "       | 1,036   | "           | "        | Trace.   | "           |
| "                                | 22 | ... | 38.3            | 38.5   | 39.5   | 52     | 64   | 20           | 20   | "                      | "       | 1,042   | "           | "        | "        | "           |
| "                                | 23 | ... | 37.7            | 39.0   | 39.5   | 48     | 60   | 16           | 16   | "                      | "       | 1,042   | "           | "        | "        | "           |
| "                                | 24 | ... | 38.1            | 38.8   | 39.0   | 48     | 48   | 16           | 12   | "                      | "       | 1,034   | "           | "        | "        | "           |
| "                                | 25 | ... | 37.5            | 39.0   | 39.2   | 44     | 56   | 16           | 16   | "                      | Turbid  | 1,040   | "           | "        | "        | "           |
| "                                | 26 | ... | 38.3            | 39.0   | 39.6   | 52     | 48   | 12           | 16   | "                      | "       | 1,030   | "           | "        | "        | "           |
| "                                | 27 | ... | 38.1            | 39.3   | 38.3   | 44     | 52   | 28           | 16   | "                      | "       | 1,040   | "           | "        | "        | "           |
| "                                | 28 | ... | 38.4            | 38.4   | 37.7   | 44     | 48   | 20           | 16   | "                      | "       | 1,058   | "           | "        | 1/16     | "           |
| "                                | 29 | ... | 37.4            | 38.0   | 38.2   | 44     | 48   | 12           | 12   | "                      | "       | 1,050   | "           | "        | 1/12     | "           |
| "                                | 30 | ... | 38.2            | 38.7   | 38.7   | 36     | 60   | 8            | 16   | "                      | "       | 1,048   | "           | "        | 1/15     | "           |
| "                                | 31 | ... | 37.0            | 39.0   | 39.1   | 52     | 64   | 16           | 20   | "                      | "       | 1,054   | Neutral ... | "        | 1/18     | "           |
| June                             | 1  | ... | 37.8            | 39.2   | 39.2   | 52     | 60   | 20           | 12   | "                      | "       | 1,040   | "           | "        | 1/14     | "           |
| "                                | 2  | ... | 37.8            | 38.7   | 39.4   | 44     | 68   | 16           | 24   | "                      | "       | 1,038   | Alkaline... | "        | Trace.   | "           |
| "                                | 3  | ... | 38.3            | 39.4   | 40.4   | 48     | 64   | 16           | 20   | "                      | "       | 1,042   | "           | "        | 1/9      | "           |
| 3rd, 5 P.M.—Slight constipation. |    |     |                 |        |        |        |      |              |      |                        |         |         |             |          |          |             |
| "                                | 4  | ... | 38.4            | 39.2   | 39.8   | 52     | 60   | 20           | 20   | "                      | "       | 1,048   | "           | "        | 1/9      | "           |
| "                                | 5  | ... | 38.3            | 38.7   | 38.8   | 48     | 60   | 16           | 24   | "                      | Clear   | 1,026   | "           | "        | Trace.   | "           |
| "                                | 6  | ... | 37.8            | 39.2   | 39.5   | 48     | 76   | 16           | 12   | "                      | Turbid  | 1,054   | Neutral ... | "        | 1/12     | "           |
| "                                | 7  | ... | 37.8            | 38.6   | 38.3   | 48     | 48   | 16           | 16   | "                      | "       | 1,034   | Alkaline... | "        | 1/18     | "           |
| "                                | 8  | ... | 38.3            | 38.6   | 39.1   | 40     | 56   | 16           | 26   | "                      | Clear   | 1,026   | Acid ...    | "        | Trace.   | "           |
| "                                | 9  | ... | 38.2            | 39.0   | 39.2   | 48     | 60   | 16           | 20   | "                      | "       | 1,010   | Alkaline... | "        | "        | "           |
| "                                | 10 | ... | 38.2            | 39.0   | 38.6   | 48     | 52   | 12           | 16   | "                      | "       | 1,018   | "           | "        | Nil      | "           |
| "                                | 11 | ... | 37.8            | 38.2   | 38.8   | 38     | 60   | 12           | 12   | "                      | Turbid  | 1,034   | "           | "        | Trace.   | "           |
| "                                | 12 | ... | 38.2            | 38.5   | 39.0   | 52     | 56   | 16           | 20   | "                      | "       | 1,036   | "           | "        | 1/12     | "           |
| "                                | 13 | ... | 37.5            | 39.2   | 39.2   | 44     | 56   | 16           | 16   | "                      | "       | 1,028   | "           | "        | 1/16     | "           |
| "                                | 14 | ... | 38.0            | 38.3   | 39.2   | 48     | 56   | 20           | 24   | "                      | "       | 1,054   | "           | Trace.   | Nil      | "           |
| "                                | 15 | ... | 37.3            | 38.4   | 38.4   | 40     | 44   | 16           | 16   | "                      | Clear   | 1,022   | "           | Nil      | Trace.   | "           |
| "                                | 16 | ... | 36.6            | 36.8   | 36.8   | 48     | 52   | 12           | 16   | "                      | "       | 1,020   | "           | "        | "        | "           |
| "                                | 17 | ... | 37.6            | 38.0   | 38.1   | 52     | 52   | 12           | 16   | "                      | Turbid  | 1,022   | "           | "        | "        | "           |
| "                                | 18 | ... | 37.0            | 37.6   | 37.8   | 48     | 56   | 16           | 22   | "                      | "       | 1,024   | "           | "        | "        | "           |
| "                                | 19 | ... | 37.0            | 36.8   | 37.3   | 48     | 56   | 8            | 20   | "                      | Clear   | 1,026   | "           | "        | "        | "           |
| "                                | 20 | ... | 36.2            | 37.2   | 37.4   | 48     | 32   | 16           | 16   | "                      | Turbid  | 1,048   | "           | "        | 1/18     | "           |
| "                                | 21 | ... | 37.0            | 38.2   | 38.6   | 64     | 64   | 12           | 16   | "                      | Clear   | 1,020   | "           | "        | Nil      | "           |
| "                                | 22 | ... | 37.2            | 37.4   | 37.6   | 56     | 56   | 16           | 12   | "                      | "       | 1,028   | "           | "        | "        | "           |
| "                                | 23 | ... | 37.0            | 37.4   | 37.8   | 48     | 60   | 16           | 16   | "                      | "       | 1,018   | "           | "        | "        | "           |
| "                                | 24 | ... | 37.2            | 37.8   | 37.4   | 68     | 52   | 16           | 20   | "                      | "       | 1,058   | "           | "        | 1/12     | "           |
| "                                | 25 | ... | 37.6            | 37.6   | 38.1   | 52     | 60   | 12           | 12   | "                      | Turbid  | 1,046   | "           | "        | Trace.   | "           |
| "                                | 26 | ... | 36.8            | 37.9   | 37.8   | 52     | 60   | 12           | 12   | "                      | "       | 1,050   | "           | "        | 1/12     | "           |
| "                                | 27 | ... | 37.2            | 39.6   | 39.3   | 48     | 68   | 12           | 12   | "                      | Clear   | 1,016   | "           | "        | Nil      | "           |
| "                                | 28 | ... | 38.2            | 39.7   | 39.4   | 60     | 68   | 16           | 20   | "                      | Turbid  | 1,034   | "           | "        | "        | "           |
| "                                | 29 | ... | 38.0            | 38.4   | 39.0   | 60     | 64   | 16           | 12   | "                      | "       | 1,040   | "           | "        | "        | "           |
| "                                | 30 | ... | 37.8            | 38.6   | 39.0   | 68     | 64   | 20           | 12   | "                      | "       | 1,032   | "           | "        | "        | "           |
| July                             | 1  | ... | 37.6            | 37.8   | 38.5   | 52     | 60   | 12           | 12   | "                      | "       | 1,016   | "           | "        | "        | "           |
| "                                | 2  | ... | 37.7            | 37.8   | 38.3   | 60     | 64   | 12           | 16   | "                      | "       | 1,050   | Acid ...    | "        | 1/12     | "           |
| "                                | 3  | ... | 37.8            | 38.2   | 38.8   | 52     | 56   | 16           | 16   | "                      | Clear   | 1,012   | Alkaline... | Trace.   | Nil      | "           |
| "                                | 4  | ... | 37.6            | 37.8   | 38.2   | 48     | 56   | 12           | 16   | "                      | Turbid  | 1,030   | "           | Nil      | 1/9      | "           |
| "                                | 5  | ... | 37.4            | 38.2   | 38.2   | 58     | 60   | 12           | 12   | "                      | "       | 1,016   | "           | "        | Trace.   | "           |
| "                                | 6  | ... | 37.4            | 37.8   | 37.8   | 56     | 56   | 12           | 12   | "                      | Clear   | 1,038   | "           | "        | "        | "           |
| "                                | 7  | ... | 37.6            | 38.0   | 37.8   | 52     | 52   | 12           | 12   | "                      | "       | 1,026   | "           | "        | "        | "           |
| "                                | 8  | ... | 37.0            | 37.6   | 38.2   | 56     | 52   | 12           | 12   | "                      | "       | 1,018   | "           | "        | Nil      | "           |
| "                                | 9  | ... | 37.8            | 37.8   | 38.7   | 56     | 60   | 12           | 16   | "                      | Turbid  | 1,012   | "           | "        | "        | "           |
| "                                | 10 | ... | 37.6            | 37.6   | 38.4   | 56     | 56   | 12           | 12   | "                      | "       | 1,026   | "           | "        | "        | "           |



| Date.        | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.    |         |           |          |                   |
|--------------|-----------------|--------|--------|--------|------|--------------|------|------------------------|-----------|---------|-----------|----------|-------------------|
|              | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour.   | Sp. Gr. | Reaction. | Albumen. | Hippuric<br>Acid. |
| 1893.        |                 |        |        |        |      |              |      |                        |           |         |           |          |                   |
| July 11...   | 37.2            | 37.4   | 38.3   | 48     | 48   | 12           | 16   | Absent.                | Turbid.   | 1.048   | Alkaline. | Nil.     | 1/17              |
| " 12...      | 37.8            | 38.2   | 38.8   | 56     | 60   | 12           | 12   | " ...                  | Clear ..  | 1.024   | "         | "        | Nil               |
| " 13...      | 38.2            | 38.2   | 38.4   | 56     | 60   | 16           | 12   | " ...                  | Turbid .  | 1.044   | "         | "        | 1/14              |
| " 14...      | 37.6            | 37.6   | 38.5   | 52     | 52   | 12           | 12   | " ...                  | Clear ... | 1.026   | "         | "        | 1/9               |
| " 15...      | 37.6            | 38.0   | 38.2   | 56     | 56   | 16           | 12   | " ..                   | Turbid .  | 1.024   | "         | "        | Trace.            |
| " 16...      | 37.4            | 37.8   | 38.4   | 48     | 56   | 16           | 12   | " ...                  | " ...     | 1.018   | "         | Trace.   | Nil               |
| " 17...      | 37.0            | 38.0   | 38.4   | 52     | 56   | 12           | 12   | " ...                  | " ...     | 1.024   | "         | Nil.     | 1/16              |
| " 18...      | 38.2            | 38.9   | 39.2   | 52     | 60   | 12           | 12   | Few                    | "         | 1.018   | "         | "        | Nil.              |
| " 19...      | 38.8            | 39.2   | 39.6   | 64     | 68   | 16           | 12   | Absent.                | "         | 1.012   | "         | Trace.   | "                 |
| " 20...      | 38.0            | 38.4   | 38.9   | 52     | 60   | 16           | 10   | "                      | Clear.    | 1.032   | "         | Nil.     | "                 |
| " 21...      | 37.2            | 37.6   | 38.0   | 48     | 51   | 12           | 14   | "                      | "         | 1.012   | "         | "        | "                 |
| " 22...      | 38.0            | 38.3   | 38.3   | 52     | 48   | 12           | 14   | "                      | Turbid.   | 1.031   | "         | "        | "                 |
| " 23...      | 37.8            | 37.8   | 38.7   | 48     | 56   | 16           | 12   | "                      | Clear.    | 1.030   | "         | "        | "                 |
| " 24...      | 37.1            | 38.2   | 38.1   | 52     | 56   | 16           | 12   | "                      | Turbid.   | 1.024   | "         | Trace.   | Trace.            |
| " 25...      | 37.8            | 37.8   | 38.0   | 48     | 60   | 16           | 16   | "                      | "         | 1.031   | "         | Nil.     | 1/18              |
| " 26...      | 38.0            | 38.4   | 38.8   | 64     | 52   | 20           | 16   | "                      | "         | 1.028   | "         | "        | "                 |
| " 27...      | 37.8            | 38.2   | 38.5   | 48     | 52   | 12           | 16   | "                      | "         | 1.032   | "         | "        | "                 |
| " 28...      | 37.8            | 38.2   | 38.8   | 48     | 52   | 12           | 16   | "                      | "         | 1.010   | "         | "        | "                 |
| " 29...      | 37.6            | 37.8   | 38.6   | 44     | 52   | 20           | 12   | "                      | "         | 1.039   | "         | Trace.   | Trace.            |
| " 30...      | 37.4            | 37.8   | 38.2   | 48     | 48   | 12           | 12   | "                      | Clear.    | 1.017   | "         | "        | Nil.              |
| " 31...      | 37.2            | 38.2   | 38.4   | 48     | 52   | 12           | 12   | "                      | Turbid.   | 1.028   | "         | "        | "                 |
| August 1...  | 37.8            | 37.6   | 38.4   | 48     | 48   | 12           | 12   | "                      | "         | 1.020   | "         | "        | "                 |
| " 2...       | 37.6            | 37.7   | 38.5   | 68     | 52   | 16           | 12   | "                      | Clear.    | 1.044   | "         | Nil.     | 1/12              |
| " 3...       | 37.4            | 38.2   | 38.1   | 44     | 56   | 12           | 10   | "                      | Turbid.   | 1.021   | "         | "        | Trace.            |
| " 4...       | 37.8            | 38.4   | 38.4   | 52     | 52   | 16           | 12   | "                      | Clear.    | 1.028   | "         | "        | Nil.              |
| " 5...       | 37.8            | 38.2   | 38.4   | 48     | 56   | 12           | 12   | "                      | Turbid.   | 1.044   | "         | "        | Trace.            |
| " 6...       | 38.2            | 37.8   | 38.7   | 52     | 56   | 12           | 12   | "                      | Clear.    | 1.020   | "         | "        | Nil.              |
| " 7...       | 38.4            | 37.8   | 38.6   | 52     | 60   | 12           | 12   | "                      | "         | 1.027   | "         | "        | "                 |
| " 8...       | 37.8            | 38.4   | 38.4   | 52     | 52   | 12           | 12   | "                      | "         | 1.013   | "         | "        | "                 |
| " 9...       | 37.6            | 38.2   | 38.2   | 52     | 52   | 12           | 16   | "                      | Turbid.   | 1.018   | "         | "        | Trace.            |
| " 10...      | 37.8            | 38.0   | 38.4   | 52     | 52   | 12           | 16   | "                      | "         | 1.029   | "         | "        | Nil.              |
| " 11...      | 37.4            | 38.4   | 38.6   | 48     | 52   | 12           | 16   | "                      | "         | 1.058   | "         | "        | Trace.            |
| " 12...      | 37.6            | 38.4   | 38.2   | 48     | 56   | 16           | 16   | "                      | "         | 1.021   | "         | "        | Nil.              |
| " 13...      | 37.6            | 37.8   | 38.5   | 52     | 56   | 12           | 16   | "                      | Clear.    | 1.020   | "         | "        | "                 |
| " 14...      | 37.2            | 37.5   | 38.5   | 56     | 68   | 12           | 12   | "                      | Turbid.   | 1.034   | "         | "        | "                 |
| " 15...      | 37.8            | 38.0   | 38.6   | 56     | 56   | 12           | 16   | "                      | Clear.    | 1.017   | "         | "        | "                 |
| " 16...      | 38.2            | 37.8   | 38.8   | 48     | 56   | 12           | 12   | "                      | Turbid.   | 1.026   | "         | "        | "                 |
| " 17...      | 37.0            | 38.4   | 38.8   | 56     | 56   | 12           | 16   | "                      | Clear.    | 1.014   | "         | "        | "                 |
| " 18...      | 38.0            | 38.7   | 38.5   | 48     | 54   | 12           | 10   | "                      | Turbid.   | 1.030   | "         | "        | "                 |
| " 19...      | 39.0            | 37.8   | 38.8   | 60     | 60   | 16           | 16   | "                      | Clear.    | 1.028   | "         | "        | "                 |
| " 20...      | 37.6            | 38.6   | 38.3   | 52     | 64   | 12           | 16   | "                      | Turbid.   | 1.018   | "         | "        | "                 |
| " 21...      | 37.4            | 37.6   | 38.2   | 60     | 64   | 12           | 12   | "                      | "         | 1.028   | "         | Trace.   | "                 |
| " 22...      | 37.4            | 38.2   | 38.0   | 52     | 52   | 12           | 16   | "                      | Clear.    | 1.036   | "         | "        | Trace.            |
| " 23...      | 36.8            | 37.8   | 38.4   | 52     | 56   | 12           | 12   | "                      | "         | 1.030   | "         | Nil.     | "                 |
| " 24...      | 37.6            | 38.0   | 38.2   | 52     | 60   | 12           | 12   | "                      | "         | 1.026   | "         | "        | 1/14              |
| " 25...      | 38.2            | 38.2   | 38.4   | 60     | 60   | 12           | 12   | "                      | Turbid.   | 1.034   | "         | "        | Trace.            |
| " 26...      | 37.8            | 38.0   | 38.8   | 52     | 56   | 12           | 12   | "                      | "         | 1.034   | "         | "        | Nil.              |
| " 27...      | 37.6            | 37.7   | 37.8   | 40     | 52   | 12           | 12   | "                      | "         | 1.014   | "         | "        | "                 |
| " 28...      | 37.6            | 37.6   | 38.3   | 44     | 48   | 12           | 12   | "                      | Clear.    | 1.024   | "         | Trace.   | "                 |
| " 29...      | 38.1            | 38.1   | 38.6   | 48     | 52   | 12           | 12   | "                      | "         | 1.014   | "         | Nil.     | "                 |
| " 30...      | 38.1            | 39.3   | 39.5   | 44     | 60   | 16           | 12   | "                      | "         | 1.018   | "         | "        | Trace.            |
| " 31...      | 38.0            | 39.2   | 39.2   | 40     | 52   | 12           | 16   | "                      | "         | 1.018   | "         | "        | "                 |
| Septem. 1... | 38.2            | 38.6   | 38.5   | 56     | 56   | 12           | 16   | "                      | Turbid.   | 1.028   | "         | "        | Nil.              |
| " 2...       | 37.7            | 38.0   | 38.4   | 48     | 44   | 12           | 12   | "                      | Clear.    | 1.016   | "         | "        | "                 |
| " 3...       | 37.5            | 37.3   | 38.4   | 40     | 52   | 12           | 12   | "                      | "         | 1.042   | "         | Trace.   | "                 |
| " 4...       | 37.3            | 37.7   | 37.8   | 40     | 48   | 12           | 12   | "                      | "         | 1.022   | "         | "        | "                 |
| " 5...       | 37.7            | 37.8   | 40.4   | 52     | 68   | 12           | 16   | "                      | "         | 1.034   | "         | "        | Trace.            |
| " 6...       | 37.4            | 38.8   | 39.2   | 64     | 64   | 20           | 20   | "                      | "         | 1.644   | "         | Nil.     | 1/16              |
| " 7...       | 37.3            | 37.8   | 38.4   | 56     | 52   | 12           | 12   | "                      | Turbid.   | 1.026   | "         | Trace.   | Nil.              |
| " 8...       | 37.2            | 38.2   | 38.4   | 56     | 56   | 12           | 16   | "                      | Clear.    | 1.030   | "         | "        | 1/17              |
| " 9...       | 37.4            | 38.4   | 38.6   | 48     | 56   | 12           | 12   | "                      | "         | 1.020   | "         | Nil.     | Trace.            |
| " 10...      | 37.6            | 40.1   | 38.4   | 48     | 60   | 16           | 16   | "                      | "         | 1.033   | "         | Trace.   | "                 |
| " 11...      | 37.8            | 38.0   | 40.0   | 52     | 76   | 16           | 20   | "                      | "         | 1.026   | "         | "        | Nil.              |
| " 12...      | 38.4            | 39.2   | 39.0   | 64     | 72   | 16           | 24   | "                      | Turbid.   | 1.016   | "         | "        | "                 |
| " 13...      | 38.2            | 38.2   | 39.0   | 64     | 68   | 20           | 12   | "                      | Clear.    | 1.026   | "         | "        | "                 |
| " 14...      | 38.6            | 39.0   | 38.6   | 64     | 64   | 16           | 12   | "                      | "         | 1.020   | "         | Nil.     | "                 |
| " 15...      | 38.0            | 38.8   | 39.2   | 52     | 52   | 16           | 12   | "                      | "         | 1.012   | "         | "        | 1/17              |
| " 16...      | 38.4            | 38.8   | 39.2   | 52     | 68   | 16           | 16   | "                      | "         | 1.020   | "         | Trace.   | Nil.              |
| " 17...      | 38.2            | 39.2   | 39.0   | 44     | 60   | 16           | 12   | "                      | "         | 1.017   | "         | "        | "                 |
| " 18...      | 39.8            | 39.8   | 40.0   | 52     | 60   | 16           | 20   | "                      | Turbid.   | 1.038   | "         | Nil.     | 1/15              |
| " 19...      | 38.6            | 38.6   | 38.6   | 56     | 68   | 12           | 12   | "                      | "         | 1.024   | "         | Trace.   | Nil.              |

| Date.         | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |           |          |                   |
|---------------|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|-----------|----------|-------------------|
|               | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction. | Albumen. | Hippuric<br>Acid. |
| 1893.         |                 |        |        |        |      |              |      |                        |         |         |           |          |                   |
| Septem. 20... | 38.4            | 39.4   | 40.1   | 68     | 52   | 16           | 24   | Absent.                | Clear.  | 1018    | Alkaline. | Trace.   | Nil.              |
| " 21...       | 38.3            | 39.4   | 39.2   | 68     | 52   | 16           | 16   | "                      | "       | 1020    | "         | 1/40     | "                 |
| " 22...       | 38.6            | 39.4   | 38.5   | 60     | 64   | 16           | 16   | "                      | Turbid. | 1024    | Neutral.  | Trace.   | Trace.            |
| " 23...       | 38.6            | 39.2   | 39.3   | 56     | 68   | 20           | 20   | "                      | Clear.  | 1030    | Acid.     | "        | "                 |
| " 24...       | 38.8            | 38.7   | 38.5   | 55     | 64   | 16           | 20   | "                      | "       | 1030    | "         | "        | "                 |
| " 25...       | 39.0            | 39.4   | 38.7   | 56     | 52   | 20           | 20   | "                      | "       | 1036    | Alkaline. | "        | "                 |
| " 26...       | 38.8            | 38.6   | 38.6   | 64     | 68   | 20           | 16   | "                      | "       | 1036    | "         | "        | 1/15              |
| " 27...       | 39.2            | 39.5   | 39.4   | 68     | 68   | 28           | 24   | "                      | "       | 1022    | "         | "        | 1/20              |
| " 28...       | 38.6            | 38.0   | 39.7   | 60     | 76   | 20           | 20   | "                      | "       | 1010    | "         | "        | Nil.              |
| " 29...       | 38.2            | 38.5   | 39.8   | 48     | 52   | 28           | 20   | "                      | Turbid. | 1018    | "         | "        | "                 |
| " 30...       | 38.4            | 38.4   | 39.0   | 64     | 64   | 20           | 16   | "                      | Clear.  | 1034    | "         | 1/14th   | Trace.            |
| October 1...  | 37.8            | 38.1   | 38.8   | 52     | 60   | 16           | 16   | "                      | "       | 1026    | "         | Trace.   | Nil.              |
| " 2...        | 38.5            | 38.7   | 39.0   | 76     | 56   | 20           | 20   | "                      | "       | 1018    | "         | "        | "                 |
| " 3...        | 37.6            | 38.4   | 38.3   | 48     | 60   | 16           | 16   | "                      | "       | 1044    | "         | Nil.     | "                 |
| " 4...        | 38.0            | 37.8   | 38.6   | 52     | 56   | 12           | 16   | "                      | "       | 1022    | "         | "        | "                 |
| " 5...        | 37.8            | 38.4   | 40.0   | 64     | 72   | 16           | 20   | "                      | Turbid. | 1037    | "         | Trace.   | "                 |
| " 6...        | 38.2            | 38.5   | 38.6   | 52     | 56   | 12           | 16   | "                      | "       | 1050    | "         | Nil.     | 1/12              |
| " 7...        | 38.5            | 38.6   | 39.0   | 60     | 56   | 12           | 16   | "                      | Clear.  | 1026    | "         | "        | 1/8               |
| " 8...        | 38.2            | 38.4   | 38.7   | 56     | 60   | 12           | 12   | "                      | "       | 1036    | "         | "        | 1/8               |
| " 9...        | 38.0            | 38.2   | 38.8   | 64     | 68   | 12           | 16   | "                      | Turbid. | 1052    | "         | "        | 1/13              |
| " 10...       | 37.4            | 38.2   | 38.6   | 44     | 56   | 18           | 20   | "                      | Clear.  | 1014    | "         | "        | Trace.            |
| " 11...       | 37.6            | 37.7   | 38.6   | 52     | 48   | 16           | 16   | "                      | "       | 1042    | "         | "        | 1/12              |
| " 12...       | 37.8            | 37.8   | 38.6   | 60     | 60   | 16           | 20   | "                      | "       | 1021    | "         | "        | 1/22              |
| " 13...       | 37.8            | 38.6   | 38.6   | 48     | 64   | 16           | 12   | "                      | "       | 1032    | "         | Trace.   | 1/16              |
| " 14...       | 37.8            | 38.1   | 38.4   | 48     | 56   | 20           | 20   | "                      | "       | 1028    | "         | "        | 1/15              |
| " 15...       | 37.6            | 37.7   | 38.4   | 44     | 52   | 12           | 16   | "                      | "       | 1018    | "         | Nil.     | 1/12              |
| " 16...       | 37.8            | 37.4   | 37.8   | 60     | 64   | 12           | 12   | "                      | "       | 1026    | Acid.     | "        | 1/13              |
| " 17...       | 37.5            | 37.7   | 38.2   | 48     | 52   | 16           | 16   | "                      | "       | 1022    | Alkaline. | "        | 1/13              |
| " 18...       | 37.3            | 38.0   | 39.7   | 48     | 48   | 12           | 12   | "                      | "       | 1038    | "         | "        | 1/6               |
| " 19...       | 38.0            | 37.6   | 38.6   | 56     | 52   | 12           | 16   | "                      | "       | 1034    | "         | "        | 1/6               |
| " 20...       | 37.0            | 37.8   | 38.8   | 52     | 68   | 12           | 12   | "                      | "       | 1024    | "         | "        | 1/6               |
| " 21...       | 37.7            | 37.4   | 38.4   | 56     | 56   | 12           | 16   | "                      | "       | 1026    | "         | "        | 1/12              |
| " 22...       | 37.6            | 37.9   | 38.6   | 44     | 56   | 16           | 16   | "                      | "       | 1030    | "         | "        | 1/16              |
| " 23...       | 37.0            | 37.4   | 38.4   | 44     | 56   | 12           | 16   | "                      | Turbid. | 1030    | "         | Trace.   | 1/22              |
| " 24...       | 37.2            | 37.8   | 38.6   | 48     | 56   | 12           | 12   | "                      | Clear.  | 1932    | "         | Nil.     | 1/14              |
| " 25...       | 37.2            | 38.1   | 38.4   | 48     | 56   | 12           | 12   | "                      | "       | 1028    | "         | "        | Trace.            |
| " 26...       | 37.4            | 37.5   | 38.8   | 48     | 56   | 12           | 12   | "                      | "       | 1024    | "         | Trace.   | Nil.              |
| " 27...       | 37.4            | 38.4   | 38.6   | 48     | 56   | 12           | 16   | "                      | "       | 1024    | "         | "        | Trace.            |
| " 28...       | 38.0            | 38.0   | 39.0   | 52     | 68   | 16           | 24   | "                      | "       | 1024    | "         | "        | 1/18              |
| " 29...       | 38.2            | 38.3   | 38.8   | 68     | 56   | 20           | 24   | "                      | "       | 1020    | "         | "        | 1/16              |
| " 30...       | 37.8            | 38.3   | 38.8   | 56     | 60   | 12           | 12   | "                      | "       | 1024    | "         | Nil.     | 1/8               |
| " 31...       | 37.8            | 38.1   | 39.2   | 52     | 72   | 20           | 16   | "                      | "       | 1020    | "         | "        | Trace.            |
| November 1... | 37.4            | 38.2   | 38.8   | 52     | 64   | 12           | 16   | "                      | "       | 1032    | "         | Trace.   | 1/20              |
| " 2...        | 37.4            | 37.5   | 38.6   | 48     | 64   | 12           | 20   | "                      | "       | 1024    | "         | "        | Trace.            |
| " 3...        | 37.6            | 37.8   | 38.4   | 56     | 60   | 12           | 16   | "                      | "       | 1028    | "         | "        | 1/13              |
| " 4...        | 38.1            | 37.8   | 38.8   | 56     | 64   | 16           | 12   | "                      | "       | 1028    | "         | Nil.     | 1/4               |
| " 5...        | 37.8            | 37.6   | 38.6   | 60     | 64   | 16           | 16   | "                      | "       | 1032    | "         | "        | 1/8               |
| " 6...        | 38.2            | 38.0   | 39.2   | 60     | 48   | 16           | 12   | "                      | "       | 1034    | "         | Trace.   | Trace.            |
| " 7...        | 38.0            | 38.4   | 39.2   | 60     | 60   | 12           | 16   | "                      | "       | 1028    | "         | Nil.     | "                 |
| " 8...        | 37.6            | 38.5   | 38.8   | 60     | 68   | 12           | 12   | "                      | "       | 1028    | "         | Trace.   | "                 |
| " 9...        | 37.8            | 37.6   | 38.2   | 60     | 64   | 12           | 16   | "                      | "       | 1026    | "         | Nil.     | 1/4               |
| " 10...       | 37.4            | 38.5   | 38.8   | 52     | 60   | 12           | 16   | "                      | "       | 1028    | "         | "        | 1/6               |
| " 11...       | 39.3            | 39.6   | 40.0   | 64     | 60   | 12           | 20   | "                      | "       | 1024    | "         | "        | 1/10              |
| " 12...       | 38.4            | 39.7   | 38.8   | 52     | 60   | 16           | 20   | "                      | "       | 1040    | "         | "        | 1/8               |
| " 13...       | 38.3            | 38.6   | 38.6   | 56     | 64   | 12           | 12   | "                      | "       | 1010    | "         | "        | Nil.              |
| " 14...       | 37.7            | 38.0   | 38.4   | 56     | 60   | 16           | 16   | "                      | "       | 1030    | "         | Trace.   | 1/8               |
| " 15...       | 37.2            | 37.4   | 37.3   | 60     | 60   | 12           | 12   | "                      | "       | 1030    | "         | Nil.     | 1/16              |
| " 16...       | 37.7            | 38.2   | 38.8   | 52     | 56   | 12           | 12   | "                      | "       | 1028    | "         | "        | 1/15              |
| " 17...       | 37.8            | 38.5   | 38.3   | 44     | 44   | 12           | 12   | "                      | "       | 1022    | "         | "        | 1/16              |



Bull \_\_\_\_\_ Age, 2 years \_\_\_\_\_ Sex, \_\_\_\_\_ Colour, \_\_\_\_\_  
Disease, Rat (Mus: decumanus) 'Surra' \_\_\_\_\_ Date of Inoculation, 27.7.92. \_\_\_\_\_ Result, \_\_\_\_\_ Register No. IV \_\_\_\_\_

Bull

Disease, Rat (*Mus: decumanus*) 'Surra'

*Date of Inoculation, 27.7.92.*

Result,

Date of Result,

Register No. IV

Register No. IV

[illegible]

(S. 415)

Haematozoon Curve  
Temperature .....

Drawn & Litho: Govt Photoduplino: Office. Poona 1893.

Pulse.....

Respiration.....

X Inoculated subcutaneously with 2.0 c.c. of blood containing hematoma taken from the heart of a Rat (*Mus. decumanus*) immediately after death





Bull \_\_\_\_\_ Age, \_\_\_\_\_ Sex, \_\_\_\_\_ Colour, \_\_\_\_\_  
Disease, \_\_\_\_\_ Date of \_\_\_\_\_ Result, \_\_\_\_\_ Register No. IV. \_\_\_\_\_

[illegible]

Harmatoozon Curve  
Temperature... ..

Drawn & Litho: Govt. Photoduplino: Office. Poona/1893.

Pulse.....  
Respiration.....





RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Bull \_\_\_\_\_ Sex \_\_\_\_\_ Colour \_\_\_\_\_  
Disease \_\_\_\_\_ Age \_\_\_\_\_ Register No. IV \_\_\_\_\_  
Date of \_\_\_\_\_ Result \_\_\_\_\_

| Dates of Observation         |                        | Temperature |     | Time |      | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   |      |
|------------------------------|------------------------|-------------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Respiration<br>per<br>minute | Pulse<br>per<br>minute | F           | C   | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      |
|                              |                        |             |     | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| 55                           | 120                    | 103         | 45° | 8    | 8    | 9    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    |
| 50                           | 110                    | 102         | 44° | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    |
| 45                           | 100                    | 101         | 43° | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    |
| 40                           | 90                     | 100         | 42° | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    |
| 35                           | 80                     | 106         | 41° | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    |
| 30                           | 70                     | 104         | 40° | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    |
| 25                           | 60                     | 103         | 39° | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    |
| 20                           | 50                     | 101         | 38° | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    |
| 15                           | 40                     | 99          | 37° | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    |
| 10                           | 30                     | 97          | 36° | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    |
| 5                            | 20                     | 95          | 35° | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    |
|                              |                        | 94          | 34° | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    |

(5.415)

Haematocrit Curve \_\_\_\_\_  
Temperature \_\_\_\_\_  
Pulse \_\_\_\_\_  
Respiration \_\_\_\_\_  
Drawn & Litho: Govt Photodupl. Office, Poona 1993.



Bull \_\_\_\_\_ Age, \_\_\_\_\_ Sex, \_\_\_\_\_ Colour, \_\_\_\_\_  
Disease, \_\_\_\_\_ Result, \_\_\_\_\_ Date of \_\_\_\_\_ Register No. IV

| Dates of Observation.   |                   | Oct.          | 1   | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10        | 11        | 12        | 13        | 14        | 15        | 16        | 17        | 18        | 19        | 20        | 21        | 22        | 23        |
|-------------------------|-------------------|---------------|-----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Days of Disease         |                   |               |     |           |           |           |           |           |           |           |           |           | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10        | 11        | 12        | 13        |
| Organisms in Blood.     |                   |               |     |           |           |           |           |           |           |           |           |           | F         |           |           |           |           |           |           |           |           |           |           |           |           |
| Respiration per minute. | Pulse per minute. | Temperature F | C   | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      |
|                         |                   | 114           | 45° | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. |
| 55                      | 120               | 113           | 45° |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 50                      | 110               | 112           | 44° |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 45                      | 100               | 111           | 43° |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 40                      | 90                | 109           | 42° |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 35                      | 80                | 107           | 41° |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 30                      | 70                | 105           | 40° |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 25                      | 60                | 103           | 39° |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 20                      | 50                | 102           | 38° |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 15                      | 40                | 99            | 37° |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 10                      | 30                | 97            | 36° |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 5                       | 20                | 95            | 35° |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                         |                   | 94            | 34° |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |

(5.415)

Drawn & Litho: East Photodup: Office, Poona 1893.

Maximilian Curve  
Temperature.....

Pulse.....  
Respiration.....

Record of Organisms in Blood

Swarming over 50 in a field of microscope

Very numerous =50

Numerous =20

Few =5

Absent





RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Bull \_\_\_\_\_ Age, \_\_\_\_\_ Sex, \_\_\_\_\_ Colour, \_\_\_\_\_  
Disease, \_\_\_\_\_ Date of \_\_\_\_\_ Result, \_\_\_\_\_ Date of Result, \_\_\_\_\_ Register No. IV

| Dates of Observation. |  | Temperature |  | Respiration<br>per<br>minute. | Pulse<br>per<br>minute. | Time | Oct. |  | Nov. |  | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |
|-----------------------|--|-------------|--|-------------------------------|-------------------------|------|------|--|------|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
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(5.415)

Hamatozon Curve \_\_\_\_\_  
Temperature .....  
Pulse .....  
Respiration .....

Drawn & Litho: Govt. Photodupl. Office, Poona 1893.





## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Bull No. 4 \_\_\_\_\_ Age, \_\_\_\_\_ Sex, \_\_\_\_\_ Colour, \_\_\_\_\_  
Disease, \_\_\_\_\_ Date of \_\_\_\_\_ Result, \_\_\_\_\_ Register No. IV \_\_\_\_\_

| Dates of Observation |  | Nov. 16  | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | Dec. 1 | 2  | 3  | 4  | 5  | 6  | 7  | 8  |
|----------------------|--|--|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|----|----|----|----|----|----|----|
| Days of Disease      |  | 37   | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52     | 53 | 54 | 55 | 56 | 57 | 58 | 59 |
| Organisms in Blood.  |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
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|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
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|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
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|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
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|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
|                      |  | <div style="display: flex; justify-content: space-between;"> <div> <p>Respiration per minute.</p> <p>Pulse per minute</p> <p>Temperature F</p> <p>Temperature C</p> </div> <div> <p>Time</p> <p>A.M.</p> <p>P.M.</p> </div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |
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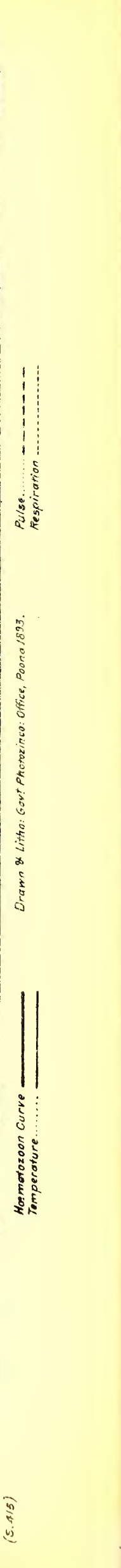
(S. 415)

Drawn & Litho: Govt Photoduplino: Office, Poona 1893.

Pulse.....  
Respiration.....



| Dates of Observation.         |                        |             | Dec. | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   |
|-------------------------------|------------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Days of Disease               |                        |             |      | 60   | 61   | 62   | 63   | 64   | 65   | 66   | 67   | 68   | 69   | 70   | 71   | 72   | 73   | 74   | 75   | 76   | 77   | 78   | 79   | 80   | 81   | 82   |
| Organisms in Blood.           |                        |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Respiration<br>per<br>minute. | Pulse<br>per<br>minute | Temperature |      | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |
|                               |                        | F           | C    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        | 114         | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 55                            | 120                    | 113         | 45°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        | 112         | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 50                            | 110                    |             | 44°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        | 111         | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 45                            | 100                    | 110         | 43°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        | 109         | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 40                            | 90                     | 108         | 42°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        | 107         | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 35                            | 80                     | 106         | 41°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        | 105         | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 30                            | 70                     | 104         | 40°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        | 103         | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 25                            | 60                     | 102         | 39°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        | 101         | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 20                            | 50                     | 100         | 38°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        | 99          | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 15                            | 40                     | 98          | 37°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        | 97          | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 10                            | 30                     | 96          | 36°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        | 95          | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 5                             | 20                     | 94          | 35°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        |             | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        |             | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        |             | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        |             | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |                        |             | 34°  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |







| Date.        | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |           |          |                   |
|--------------|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|-----------|----------|-------------------|
|              | A.M.            | 1 P.M. | 3 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction. | Albumen. | Hippuric<br>Acid. |
| 1893.        |                 |        |        |        |      |              |      |                        |         |         |           |          |                   |
| ember 18...  | 38.3            | 38.3   | 39.1   | 56     | 56   | 12           | 12   | Absent.                | Clear.  | 1,026   | Alkaline. | Nil.     | 1/9               |
| " 19...      | 37.7            | 38.3   | 38.3   | 48     | 60   | 12           | 12   | "                      | "       | 1,024   | "         | "        | Trace.            |
| " 20...      | 37.7            | 38.2   | 38.6   | 60     | 52   | 12           | 16   | "                      | "       | 1,022   | "         | "        | "                 |
| " 21...      | 38.3            | 38.4   | 38.7   | 52     | 68   | 16           | 12   | "                      | "       | 1,026   | "         | Trace.   | 1/16              |
| " 22...      | 38.2            | 38.4   | 39.0   | 48     | 64   | 16           | 12   | "                      | "       | 1,040   | "         | Nil.     | 1/5               |
| " 23...      | 38.0            | 38.5   | 39.2   | 52     | 68   | 16           | 20   | "                      | "       | 1,023   | "         | "        | 1/9               |
| " 24...      | 38.5            | 38.6   | 39.3   | 48     | 68   | 16           | 16   | "                      | "       | 1,026   | "         | "        | Trace.            |
| " 25...      | 38.4            | 38.1   | 38.6   | 60     | 64   | 16           | 16   | "                      | "       | 1,030   | "         | "        | "                 |
| " 26...      | 37.6            | 38.4   | 38.8   | 56     | 52   | 12           | 12   | "                      | "       | 1,042   | "         | "        | 1/6               |
| " 27...      | 38.1            | 38.5   | 38.8   | 48     | 57   | 16           | 15   | "                      | "       | 1,034   | "         | "        | 1/6               |
| " 28...      | 37.6            | 38.3   | 38.0   | 60     | 64   | 15           | 18   | "                      | "       | 1,020   | "         | "        | 1/16              |
| " 29...      | 38.1            | 38.6   | 39.2   | 60     | 68   | 24           | 16   | "                      | "       | 1,018   | "         | "        | 1/16              |
| " 30...      | 38.0            | 38.5   | 39.3   | 60     | 66   | 12           | 18   | "                      | "       | 1,016   | "         | "        | 1/15              |
| ember 1...   | 38.2            | 38.3   | 39.8   | 65     | 66   | 12           | 16   | "                      | "       | 1,026   | "         | "        | Nil.              |
| " 2...       | 38.2            | 38.4   | 39.3   | 60     | 69   | 12           | 24   | "                      | "       | 1,024   | "         | "        | 1/13              |
| " 3...       | 38.1            | 38.2   | 38.8   | 60     | 40   | 12           | 16   | "                      | "       | 1,024   | "         | "        | Trace.            |
| " 4...       | 37.3            | 37.9   | 39.1   | 32     | 36   | 14           | 14   | "                      | "       | 1,021   | "         | "        | "                 |
| " 5...       | 37.8            | 38.2   | 38.8   | 40     | 32   | 20           | 20   | "                      | "       | 1,018   | "         | "        | "                 |
| " 6...       | 38.0            | 38.8   | 38.5   | 46     | 46   | 12           | 12   | "                      | "       | 1,024   | "         | "        | "                 |
| " 7...       | 37.2            | 38.2   | 38.7   | 40     | 30   | 10           | 16   | "                      | "       | 1,020   | "         | "        | "                 |
| " 8...       | 37.6            | 38.6   | 38.2   | 38     | 32   | 12           | 15   | "                      | "       | 1,023   | "         | "        | "                 |
| " 9...       | 38.1            | 38.1   | 38.6   | 36     | 25   | 13           | 17   | "                      | "       | 1,030   | "         | "        | 1/14              |
| " 10...      | 37.4            | 38.2   | 38.8   | 32     | 38   | 14           | 16   | "                      | "       | 1,027   | "         | "        | 1/20              |
| " 11...      | 37.8            | 38.2   | 38.2   | 30     | 32   | 16           | 16   | "                      | "       | 1,028   | "         | "        | 1/18              |
| " 12...      | 37.8            | 38.0   | 38.7   | 30     | 30   | 12           | 16   | "                      | "       | 1,030   | "         | "        | 1/22              |
| " 13...      | 37.2            | 38.1   | 38.8   | 35     | 40   | 16           | 17   | "                      | "       | 1,030   | "         | "        | 1/6               |
| " 14...      | 37.8            | 38.5   | 38.6   | 36     | 30   | 15           | 18   | "                      | "       | 1,022   | "         | "        | Trace.            |
| " 15...      | 37.9            | 38.6   | 38.6   | 36     | 25   | 14           | 15   | "                      | "       | 1,038   | "         | "        | 1/14              |
| " 16...      | 37.0            | 38.2   | 38.6   | 28     | 27   | 12           | 18   | "                      | "       | 1,022   | "         | "        | 1/14              |
| " 17...      | 37.9            | 38.0   | 38.4   | 32     | 36   | 14           | 14   | "                      | "       | 1,032   | "         | "        | 1/16              |
| " 18...      | 37.8            | 38.3   | 39.1   | 40     | 23   | 14           | 17   | "                      | "       | 1,038   | "         | "        | 1/15              |
| " 19...      | 37.8            | 38.4   | 38.6   | 38     | 30   | 14           | 17   | "                      | "       | 1,010   | "         | "        | Trace.            |
| " 20...      | 37.8            | 38.3   | 38.6   | 36     | 26   | 18           | 16   | "                      | "       | 1,044   | "         | "        | 1/14              |
| " 21...      | 37.7            | 38.2   | 38.4   | 30     | 30   | 14           | 16   | "                      | "       | 1,032   | "         | "        | 1/8               |
| " 22...      | 37.6            | 37.7   | 38.6   | 36     | 42   | 18           | 16   | "                      | "       | 1,035   | "         | "        | 1/12              |
| " 23...      | 37.9            | 38.1   | 38.8   | 34     | 30   | 18           | 15   | "                      | "       | 1,030   | "         | "        | 1/15              |
| " 24...      | 38.0            | 38.0   | 39.4   | 40     | 40   | 12           | 16   | "                      | "       | 1,030   | "         | "        | 1/18              |
| " 25...      | 38.2            | 38.2   | 39.2   | 44     | 46   | 17           | 18   | "                      | "       | 1,038   | "         | "        | 1/6               |
| " 26...      | 38.0            | 38.8   | 39.0   | 38     | 32   | 18           | 19   | "                      | "       | 1,030   | "         | "        | 1/6               |
| " 27...      | 38.4            | 38.9   | 38.9   | 30     | 30   | 13           | 24   | "                      | "       | 1,038   | "         | "        | Nil.              |
| " 28...      | 38.2            | 38.8   | 38.8   | 36     | 30   | 16           | 20   | "                      | "       | 1,042   | "         | "        | 1/9               |
| " 29...      | 38.3            | 38.6   | 38.6   | 30     | 30   | 24           | 15   | "                      | "       | 1,040   | "         | "        | Trace.            |
| " 30...      | 38.3            | 38.6   | 39.1   | 48     | 30   | 18           | 18   | "                      | "       | 1,026   | "         | "        | "                 |
| " 31...      | 37.9            | 38.3   | 39.2   | 32     | 30   | 24           | 22   | "                      | "       | 1,012   | "         | "        | Nil.              |
| 1894.        |                 |        |        |        |      |              |      |                        |         |         |           |          |                   |
| January 1... | 37.6            | 38.7   | 38.3   | 48     | 52   | 16           | 16   | "                      | "       | 1,036   | "         | "        | 1/12              |
| " 2...       | 37.6            | 37.5   | 38.5   | 56     | 60   | 12           | 12   | "                      | "       | 1,051   | "         | "        | 1/6               |
| " 3...       | 37.7            | 38.3   | 38.4   | 52     | 68   | 12           | 16   | "                      | "       | 1,043   | "         | "        | Trace.            |
| " 4...       | 38.0            | 38.0   | 38.5   | 52     | 60   | 10           | 16   | "                      | "       | 1,032   | "         | "        | 1/9               |
| " 5...       | 38.1            | 38.1   | 38.6   | 60     | 56   | 12           | 12   | "                      | Turbid. | 1,045   | "         | "        | 1/20              |
| " 6...       | 37.4            | 38.3   | 38.7   | 48     | 52   | 12           | 12   | "                      | Clear.  | 1,018   | "         | "        | Trace.            |
| " 7...       | 37.6            | 38.2   | 39.0   | 48     | 52   | 12           | 8    | "                      | "       | 1,020   | "         | "        | "                 |
| " 8...       | 37.6            | 38.1   | 38.7   | 48     | 64   | 16           | 20   | "                      | "       | 1,024   | "         | "        | 1/22              |
| " 9...       | 38.3            | 38.5   | 38.4   | 52     | 52   | 12           | 20   | "                      | Turbid. | 1,056   | "         | "        | 1/6               |
| " 10...      | 37.8            | 38.2   | 39.2   | 52     | 44   | 12           | 16   | "                      | Clear.  | 1,049   | "         | "        | 1/9               |
| " 11...      | 37.8            | 38.2   | 38.4   | 48     | 54   | 12           | 20   | "                      | "       | 1,028   | "         | "        | 1/15              |
| " 12...      | 37.7            | 38.4   | 39.1   | 48     | 56   | 12           | 12   | "                      | "       | 1,033   | "         | "        | 1/15              |
| " 13...      | 37.5            | 38.2   | 38.7   | 52     | 52   | 12           | 12   | "                      | "       | 1,030   | "         | "        | 1/15              |

| Date.         | Temperature ° C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |           |          |                   |
|---------------|------------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|-----------|----------|-------------------|
|               | A.M.             | 1 P.M. | 3 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction. | Albumen. | Hippuric<br>Acid. |
| 1894.         |                  |        |        |        |      |              |      |                        |         |         |           |          |                   |
| January 14... | 37·7             | 38·2   | 38·4   | 44     | 52   | 12           | 16   | Absent.                | Clear.  | 1,027   | Alkaline. | Nil.     | Trace.            |
| " 15...       | 37·7             | 38·0   | 38·6   | 48     | 56   | 12           | 16   | "                      | "       | 1,025   | "         | "        | 1/12              |
| " 16...       | 38·0             | 38·0   | 39·2   | 52     | 68   | 16           | 16   | "                      | Turbid. | 1,026   | "         | "        | 1/18              |
| " 17...       | 38·1             | 38·2   | 39·1   | 56     | 52   | 16           | 16   | "                      | "       | 1,048   | "         | "        | Trace.            |
| " 18...       | 38·1             | 38·3   | 38·7   | 48     | 56   | 12           | 12   | "                      | Clear.  | 1,041   | "         | "        | 1/18              |
| " 19...       | 38·1             | 38·2   | 38·7   | 56     | 52   | 16           | 46   | "                      | "       | 1,040   | "         | "        | 1/13              |
| " 20...       | 38·1             | 38·2   | 38·6   | 44     | 56   | 12           | 12   | "                      | "       | 1,053   | "         | "        | 1/6               |
| " 21...       | 37·1             | 38·1   | 38·8   | 48     | 48   | 12           | 20   | "                      | "       | 1,028   | "         | "        | 1/12              |
| " 22...       | 37·7             | 38·3   | 39·0   | 56     | 52   | 12           | 12   | "                      | "       | 1,030   | "         | "        | 1/20              |
| " 23...       | 37·5             | 37·7   | 39·4   | 56     | 60   | 12           | 16   | "                      | "       | 1,036   | "         | "        | 1/18              |
| " 24...       | 38·0             | 37·6   | 38·8   | 56     | 56   | 16           | 16   | "                      | "       | 1,034   | "         | "        | 1/18              |
| " 25...       | 37·8             | 38·5   | 30·1   | 56     | 64   | 12           | 16   | "                      | "       | 1,033   | "         | Trace.   | Trace.            |
| " 26...       | 38·1             | 37·6   | 39·3   | 56     | 52   | 12           | 20   | "                      | "       | 1,042   | "         | Nil.     | Nil.              |
| " 27...       | 37·2             | 37·8   | 39·7   | 48     | 48   | 12           | 20   | "                      | "       | 1,040   | "         | Trace.   | Trace.            |
| " 28...       | 38·1             | 37·8   | 39·0   | 56     | 64   | 16           | 16   | "                      | "       | 1,022   | "         | Nil.     | "                 |
| " 29...       | 37·7             | ...    | ...    | 40     | ...  | 24           | ...  | "                      | "       | 1,026   | "         | "        | Nil.              |

*Remarks.*—The chief points to draw attention to in this case are:—

(i) This is the first case recorded of any animal of the bovine species having been successfully inoculated with the hæmatozoon of the rat (*Mus decumanus*).

(ii) The amount of swelling and oedema, which followed inoculation at and around the point of injection, which finally disappeared on the 14th day. Also the high temperature 41° C. (105·8° F.) registered on the morning of the 8th day.

(iii) The protracted period of incubation of the disease, whether we take it as terminating on the first appearance of the urticarial eruption on the 44th day, as previous experience points to the hæmatozoon being the cause of the manifestation in the skin, or the 76th day, when the organism was found on microscopical examination of the blood. In either case the length of the latent period has only once been exceeded, *viz.*, in Horse No. LXII, inoculated with soiled rat's blood, and which occupied 63 days.

(iv) The discovery of the 'Trypanosoma' in the blood on the 76th day after inoculation, when a long and active specimen of the organism was observed, the dorsal membrane in which was particularly well developed and its complete absence from all other blood examined daily during a further period of 121 days.

(v) The marked evening exacerbations and morning remissions of temperature, which occurred on the 55th, 56th and 59th days of the disease.

(vi) The loss of flesh during the four months, which immediately followed inoculation.

(vii) Re-inoculation of the animal with virulent soiled blood 197 days after the former injection, followed by high fever, but total absence of swelling at the seat of inoculation. Appearance of the Surra organism in the blood for a period of 48 hours, 80 days later, and re-appearance for 24 hours on the 158th day, but total absence during a further period of 195 days.

MONKEY No. II.

| Date.        | Day of Disease,   | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | REMARKS. |
|--------------|---|-----------------|--------|--------|--------|------|--------------|------|------------------------|----------|
|              |   | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        |          |
| 1893.        |   |                 |        |        |        |      |              |      |                        |          |
| March 23 ... | ...<br>5 P.M., 23rd.—Inoculated subcutaneously in the right inguinal region with 1·5 c.c. of blood, containing numerous hæmatozoa taken from the hearts of two rats ( <i>Mus decumanus</i> ) immediately after death. | 38·2            | 38·6   | 38·9   | 60     | 64   | 40           | 48   | Healthy.               |          |
| " 24 ...     | ...<br>24th.—There is slight thickening at the seat of inoculation.   | 38·8            | 39·0   | 38·8   | 48     | 60   | 40           | 48   | Absent.                |          |
| " 25 ...     | ...<br>25th.—A small tumour the size of a marble, tender on manipulation, is present at the seat of inoculation.  | 38·2            | 39·0   | 39·2   | 60     | 64   | 42           | 48   | "                      |          |
| " 26 ...     | 1<br>26th.—The tumour has almost disappeared, together with the tenderness.   | 38·4            | 38·6   | 39·2   | 48     | 60   | 40           | 48   | Few.                   |          |
| " 27 ...     | 2   | 38·2            | 38·6   | 38·8   | 48     | 68   | 48           | 56   | Absent.                |          |
| " 28 ...     | 3<br>28th.—The tumour has entirely disappeared.   | 38·5            | 39·0   | 39·4   | 60     | 68   | 48           | 48   | "                      |          |



Monkey \_\_\_\_\_ Age 3 years Sex Male Colour \_\_\_\_\_  
Disease 'Fat Surra' inoculated \_\_\_\_\_ Date of inoculation 23. 3. 93. Result Still living \_\_\_\_\_ Register No II \_\_\_\_\_ Word \_\_\_\_\_

[illegible]

(S. 410)

x 5 p.m.

insulted subcutaneously, in the R. inguinal region, with 1.5 c.c. of blood containing numerous hematozoa, taken from the heart of Rat (*Mus decumanus*) immediately after death.

|             |       |             |       |
|-------------|-------|-------------|-------|
| Respiration | _____ | Temperature | _____ |
| Pulse       | _____ | Hematozoa   | _____ |

Crane & Lihb. Govt. Microscop. (Wash. D.C.) June 1894



| Date.    | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | REMARKS. |
|----------|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------|
|          |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |          |
| 1893.    |                 |                 |        |        |        |      |              |      |                     |          |
| March 29 | ...             | 4               | 38.2   | 38.8   | 39.2   | 52   | 68           | 36   | 56                  | Absent.  |
| „ 30     | ...             | 5               | 38.4   | 39.0   | 39.2   | 64   | 72           | 36   | 48                  | „        |
| „ 31     | ...             | 6               | 38.2   | 38.7   | 39.4   | 64   | 68           | 40   | 52                  | „        |
| April 1  | ...             | 7               | 38.6   | 39.2   | 39.6   | 64   | 72           | 52   | 52                  | „        |
| „ 2      | ...             | 8               | 39.0   | 39.2   | 39.2   | 64   | 64           | 44   | 52                  | „        |
| „ 3      | ...             | 9               | 39.6   | 40.0   | 40.8   | 48   | 72           | 28   | 48                  | „        |
| „ 4      | ...             | 10              | 39.6   | 40.2   | 40.6   | 64   | 72           | 44   | 52                  | „        |
| „ 5      | ...             | 11              | 39.4   | 39.6   | 39.8   | 56   | 64           | 36   | 48                  | „        |
| „ 6      | ...             | 12              | 39.4   | 39.8   | 40.0   | 52   | 68           | 36   | 56                  | „        |
| „ 7      | ...             | 13              | 38.6   | 39.4   | 39.8   | 52   | 64           | 36   | 56                  | „        |
| „ 8      | ...             | 14              | 38.6   | 39.2   | 39.6   | 64   | 68           | 44   | 52                  | „        |
| „ 9      | ...             | 15              | 37.6   | 38.8   | 38.8   | 56   | 72           | 32   | 48                  | „        |
| „ 10     | ...             | 16              | 37.8   | 38.0   | 38.4   | 64   | 76           | 44   | 48                  | „        |
| „ 11     | ...             | 17              | 37.8   | 38.2   | 38.4   | 52   | 48           | 32   | 40                  | „        |
| „ 12     | ...             | 18              | 38.6   | 38.4   | 39.0   | 60   | 64           | 48   | 48                  | „        |
| „ 13     | ...             | 19              | 38.7   | 39.8   | 40.2   | 56   | 64           | 40   | 48                  | „        |
| „ 14     | ...             | 20              | 39.0   | 38.8   | 38.0   | 52   | 56           | 32   | 28                  | „        |
| „ 15     | ...             | 21              | 38.0   | 38.2   | 38.8   | 52   | 64           | 40   | 44                  | „        |
| „ 16     | ...             | 22              | 38.2   | 37.8   | 38.4   | 60   | 56           | 40   | 36                  | „        |
| „ 17     | ...             | 23              | 37.8   | 39.0   | 39.4   | 52   | 68           | 36   | 44                  | „        |
| „ 18     | ...             | 24              | 39.6   | 39.6   | 38.8   | 56   | 64           | 40   | 60                  | „        |
| „ 19     | ...             | 25              | 37.2   | 37.8   | 38.1   | 60   | 64           | 36   | 44                  | „        |
| „ 20     | ...             | 26              | 38.0   | 39.3   | 39.4   | 68   | 72           | 40   | 60                  | „        |
| „ 21     | ...             | 27              | 39.0   | 38.4   | 39.0   | 64   | 64           | 32   | 48                  | „        |
| „ 22     | ...             | 28              | 38.4   | 38.8   | 39.8   | 60   | 68           | 32   | 52                  | „        |
| „ 23     | ...             | 29              | 38.8   | 39.2   | 40.6   | 60   | 64           | 48   | 44                  | „        |
| „ 24     | ..              | 30              | 38.4   | 38.6   | 38.6   | 60   | 64           | 48   | 44                  | „        |
| „ 25     | ...             | 31              | 38.8   | 38.2   | 37.8   | 64   | 60           | 48   | 40                  | „        |

March 22nd, 1894.—Further observations of temperature, pulse, respiration and microscopical examination of the blood were continued thrice daily for 143 days, but no hæmatozoa were observed in the blood; the animal at the date of writing, March 22nd, 1894, is in perfect health and condition.

*Inoculation of Field Rats (Nesokia providens) with soiled blood of Rats (Mus decumanus).*

Nos. I and II. February 13th, 1891, 11 A.M.—These two animals were inoculated subcutaneously with 0.6 and 0.4 c.c. of blood respectively, containing numerous hæmatozoa, taken from the heart of a rat (*Mus decumanus*) immediately after death.

Nos. III and IV. June 19th, 1894, 6 P.M.—These two animals were inoculated subcutaneously with 0.4 and 0.5 c.c. of blood respectively, containing swarms of hæmatozoa, taken from the heart of a rat (*Mus decumanus*) immediately after death.

| Date.   | Condition of Blood.<br>No. I. | Condition of Blood.<br>No. II. | Date.   | Condition of Blood.<br>No. III. | Condition of Blood.<br>No. IV. |
|---------|-------------------------------|--------------------------------|---------|---------------------------------|--------------------------------|
| 1891.   |                               |                                | 1894.   |                                 |                                |
| Feb. 13 | Hæmatozoa absent              | Hæmatozoa absent.              | June 19 | Hæmatozoa absent                | Hæmatozoa absent.              |
| " 14    | "                             | "                              | " 20    | "                               | "                              |
| " 15    | " white corpuscles increased. | " white corpuscles increased.  | " 21    | "                               | "                              |
| " 16    | " absent                      | " absent.                      | " 22    | "                               | "                              |
| " 17    | "                             | "                              | " 23    | "                               | "                              |
| " 18    | "                             | "                              | " 24    | "                               | "                              |
| " 19    | "                             | "                              | " 25    | "                               | "                              |
| " 20    | " numerous.                   | " few.                         | " 26    | "                               | "                              |
| " 21    | "                             | "                              | " 27    | "                               | "                              |
| " 22    | "                             | "                              | " 28    | "                               | "                              |
| " 23    | "                             | "                              | " 29    | "                               | "                              |
| " 24    | "                             | "                              | " 30    | "                               | "                              |
| " 25    | "                             | "                              | July 1  | "                               | "                              |
| " 26    | " very numerous.              | " numerous.                    | " 2     | "                               | "                              |
| " 27    | "                             | "                              | " 3     | "                               | "                              |
| " 28    | "                             | "                              | " 4     | "                               | "                              |
| March 1 | "                             | "                              | " 5     | "                               | "                              |
| " 2     | "                             | "                              | " 6     | "                               | "                              |
| " 3     | "                             | "                              | " 7     | "                               | "                              |
| " 4     | "                             | "                              | " 8     | "                               | "                              |
|         |                               |                                | " 9     | "                               | "                              |
|         |                               |                                | " 10    | "                               | "                              |
|         |                               |                                | " 11    | "                               | "                              |



| Date.   | Condition of Blood.<br>No. I. | Condition of Blood.<br>No. II.   | Date.       | Condition of Blood.<br>No. III.   | Condition of Blood.<br>No. IV.  |  |
|---|-------------------------------|--|-------------|---|---|--|
| 1891—   |                               |  | 1894—       |   |   |  |
| March 5 ...   | Hæmatozoa very numerous.      | Hæmatozoa numerous.  | July 12 ... | Hæmatozoa absent ...  | Hæmatozoa few.  |  |
| " 6 ...   | " " "                         | " "  | " 13 ...    | " " "   | " absent.   |  |
| " 7 ...   | " numerous.                   | " few.   | " 14 ...    | " " "   | " "   |  |
| " 8 ...   | " " "                         | " "  | " 15 ...    | " " "   | " "   |  |
| " 9 ...   | " " "                         | " "  | " 16 ...    | " " "   | " "   |  |
| " 10 ...  | " " "                         | " "  | " 17 ...    | " " "   | " "   |  |
| " 11 ...  | " few                         | " "  | " 18 ...    | " " "   | " "   |  |
| " 12 ...  | " " "                         | " "  | " 19 ...    | " " "   | " "   |  |
| " 13 ...  | " " "                         | " "  | " 20 ...    | " " "   | " "   |  |
| " 14 ...  | " absent                      | " "  | " 21 ...    | " " "   | " few.  |  |
| " 15 ...  | " " "                         | " "  | " 22 ...    | " " "   | " "   |  |
| " 16 ...  | " " "                         | " "  | " 23 ...    | " " "   | " absent.   |  |
| " 17 ...  | " few                         | " "  | " 24 ...    | " " "   | " "   |  |
| " 18 ...  | " " "                         | " "  | " 25 ...    | " " "   | " few.  |  |
| " 19 ...  | " " "                         | " "  | " 26 ...    | " " "   | " "   |  |
| " 20 ...  | " numerous.                   | " absent.  | " 27 ...    | " few   | " "   |  |
| " 21 ...  | " " "                         | " "  | " 28 ...    | " numerous.   | " "   |  |
| " 22 ...  | " " "                         | " "  | " 29 ...    | " absent  | " "   |  |
| " 23 ...  | " " "                         | " "  | " 30 ...    | " " "   | " "   |  |
| " 24 ...  | " " "                         | " "  | " 31 ...    | " " "   | " "   |  |
| " 25 ...  | " " "                         | " "  | Aug. 1 ...  | " " "   | " "   |  |
| " 26 ...  | " " "                         | " "  | " 2 ...     | " " "   | " numerous.   |  |
| " 27 ...  | " " "                         | " "  | " 3 ...     | " few   | " very numerous.  |  |
| " 28 ...  | " " "                         | " "  | " 4 ...     | " very numerous.  | " swarming.   |  |
| " 29 ...  | " " "                         | " "  | " 5 ...     | " numerous.   | " "   |  |
| " 30 ...  | " " "                         | " "  | " 6 ...     | " " "   | " "   |  |
| " 31 ...  | " " "                         | " "  | " 7 ...     | " few   | Death at noon, 6th August 1894.   |  |
| Apr. 1 ...  | " absent                      | " "  | " 8 ...     | " absent  | <i>Autopsy</i> one hour after death. <i>Body</i> fairly well nourished, weight 71 grammes.                                      |  |
| " 2 ...   | " "                           | " "  | " 9 ...     | " "   | <i>Thorax</i> .—The pleural cavities are free from fluid. The <i>lungs</i> are pale pink in colour and well distended with air. |  |
| From this date until the animal died, 26th May 1891, the organism did not re-appear in the blood. <i>Autopsy</i> immediately after death.—There are no hæmatozoa upon microscopical examination of the heart's blood. All the organs, with the exception of the spleen, present a perfectly healthy appearance. The <i>spleen</i> is large, and of a dark red colour. <i>On section</i> , the tissues are firm, and present no pathological changes to the naked eye. |                               | From this date until the animal died, 31st July 1891, the organism did not re-appear in the blood. <i>Autopsy</i> immediately after death. The pathological lesion found as at the autopsy of No. I is confined to the spleen, the other organs presenting a healthy appearance. |             | " 10 ...  | " "   | <i>Heart</i> externally and internally presents a healthy appearance.  |
|   |                               |  |             | " 11 ...  | " "   | <i>Peritoneal cavity</i> is free from fluid, but there are several small nematode worms lying in it.   |
|   |                               |  |             | " 12 ...  | " few   | <i>Stomach</i> is small, and <i>on section</i> is found to contain one nematode worm, but little or no food. <i>Spleen</i> appears slightly increased in size, and weighs 0·7 grammes. |
|   |                               |  |             | " 13 ...  | " "   | <i>Kidneys</i> and <i>bladder</i> healthy. Ratio of spleen to body weight 1 : 101·4.   |
|   |                               |  |             | " 14 ...  | " "   |  |
|   |                               |  |             | " 15 ...  | " "   |  |
|   |                               |  |             | " 16 ...  | " "   |  |
|   |                               |  |             | " 17 ...  | " very numerous.  |  |
|   |                               |  |             | " 18 ...  | " few   |  |
|   |                               |  |             | " 19 ...  | " very numerous.  |  |
|   |                               |  |             | " 20 ...  | " few   |  |
|   |                               |  |             | " 21 ...  | " numerous.   |  |
|   |                               |  |             | Death during the night. <i>Autopsy</i> immediately after death. The body is fairly well nourished, and weighed 67 grammes, all the organs with the exception of the spleen present a perfectly healthy appearance. The <i>spleen</i> is small in size, weighs 0·47 grammes. Ratio of spleen to body weight 1 : 142·5. |   |  |

*Remarks*.—The blood of Rats I and II was submitted to careful microscopical examination for a period of three days, and as during that time the blood appeared healthy and no hæmatozoa were observed, the animals were inoculated with 0·6 and 0·4 c.c. of blood respectively, containing numerous organisms, taken from the heart of a rat (*Mus decumanus*) immediately after death. The hæmatozoon made its first appearance in the blood of each animal on the morning of the eighth day after inoculation, numerous in No. I and few in No. II.

The chief point of interest in these cases is that for 42 and 118 days, respectively, previous to death, the hæmatozoon was absent from the blood.

*Remarks*.—The blood of Rats III and IV was likewise submitted to microscopical examination for several days, and as during that time the blood presented a perfectly healthy appearance, the animals were inoculated respectively with 0·4 and 0·5 c.c. of blood containing swarms of hæmatozoa obtained from the heart of a large rat (*Mus decumanus*) immediately after death. In the case of No. III the period of incubation occupied 39 days, while in that of No. IV it was 24 days, but in this latter animal only one hæmatozoon was observed in two specimens of blood examined and no further organisms were found for a further period of nine days. In the case of both animals, the organisms attained their maximum shortly before death, which occurred in 65 and 49 days, respectively.

## DONKEY No. III.

Subcutaneous inoculation with soiled rat's blood. Maximum local manifestations appeared on the 3rd day. Death due to enormous numbers of nematodes, &c., in stomach and intestines. Result negative.

Aged, but apparently healthy.

| Date.   | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Urine.  |          |           |                  |                   |        |      |
|---|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|---------|----------|-----------|------------------|-------------------|--------|------|
|   |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | Colour. | Sp. Gr.  | Reaction. | Albu-<br>men.    | Hippuric<br>Acid. |        |      |
| 1893.   |                 |                 |        |        |        |      |              |      |                     |         |          |           |                  |                   |        |      |
| March   | 1               | ...             | ...    | 38.3   | 38.8   | 38.7 | 52           | 52   | 12                  | 40      | Healthy. | Turbid.   | 1,040            | Alkaline.         | Nil.   | Nil. |
| "   | 2               | ...             | ...    | 37.7   | 39.0   | 39.2 | 44           | 56   | 16                  | 16      | "        | "         | 1,046            | "                 | "      | "    |
| "   | 3               | ...             | ...    | 37.3   | 38.4   | 38.6 | 44           | 60   | 20                  | 32      | "        | "         | 1,038            | "                 | "      | "    |
| "   | 4               | ...             | ...    | 37.2   | 38.4   | 39.4 | 44           | 52   | 16                  | 26      | "        | "         | 1,030            | "                 | "      | "    |
| "   | 5               | ...             | ...    | 38.7   | 38.2   | 38.4 | 56           | 56   | 20                  | 24      | "        | "         | 1,036            | "                 | "      | "    |
| "   | 6               | ...             | ...    | 38.7   | 38.8   | 38.7 | 60           | 56   | 36                  | 16      | "        | "         | 1,042            | "                 | "      | "    |
| "   | 7               | ...             | ...    | 37.6   | 38.1   | 38.8 | 48           | 52   | 20                  | 28      | "        | "         | 1,046            | "                 | "      | "    |
| "   | 8               | ...             | ...    | 36.8   | 39.0   | 39.2 | 48           | 56   | 20                  | 28      | "        | "         | 1,038            | "                 | "      | "    |
| "   | 9               | ...             | ...    | 36.3   | 37.2   | 38.4 | 64           | 48   | 28                  | 20      | "        | "         | 1,030            | "                 | "      | "    |
| 5 P.M., 9th.—Inoculated subcutaneously with 1.0 c.c. of blood containing numerous hæmatozoa taken from the heart of a rat ( <i>Mus decumanus</i> ) immediately after death. |                 |                 |        |        |        |      |              |      |                     |         |          |           |                  |                   |        |      |
| "   | 10              | ...             | ...    | 36.1   | 37.2   | 38.8 | 44           | 52   | 16                  | 24      | Absent.  | "         | 1,050            | "                 | "      | "    |
| 10th.—A raised somewhat circular swelling at the seat of inoculation 1.5" in diameter, slightly tender on manipulation.   |                 |                 |        |        |        |      |              |      |                     |         |          |           |                  |                   |        |      |
| "   | 11              | ...             | ...    | 36.1   | 37.2   | 38.8 | 44           | 48   | 16                  | 20      | "        | "         | 1,046            | "                 | "      | "    |
| 11th.—Swelling increased to 2.5" x 2" diameter. Conjunctivæ clear.  |                 |                 |        |        |        |      |              |      |                     |         |          |           |                  |                   |        |      |
| "   | 12              | ...             | ...    | 36.3   | 38.5   | 39.0 | 40           | 48   | 12                  | 20      | "        | "         | 1,040            | "                 | "      | "    |
| 12th.—Swelling somewhat decreased owing to withdrawal of serum for microscopical examination.   |                 |                 |        |        |        |      |              |      |                     |         |          |           |                  |                   |        |      |
| "   | 13              | ...             | ...    | 36.6   | 37.6   | 39.1 | 44           | 60   | 16                  | 24      | "        | "         | No urine passed. |                   |        |      |
| 13th.—Swelling unchanged.   |                 |                 |        |        |        |      |              |      |                     |         |          |           |                  |                   |        |      |
| "   | 14              | ...             | ...    | 37.2   | 38.1   | 38.4 | 40           | 48   | 16                  | 12      | "        | "         | 1,048            | "                 | Trace. | "    |
| 14th.—Swelling decreased, now measures 1.5" x .75" diameter.  |                 |                 |        |        |        |      |              |      |                     |         |          |           |                  |                   |        |      |
| "   | 15              | ...             | ...    | 36.5   | 38.2   | 38.1 | 44           | 48   | 16                  | 24      | "        | "         | 1,055            | "                 | 1      | "    |
| 15th.—Swelling still further decreased.   |                 |                 |        |        |        |      |              |      |                     |         |          |           |                  |                   |        |      |
| "   | 16              | ...             | ...    | 36.7   | 37.4   | 38.4 | 40           | 48   | 16                  | 20      | "        | "         | 1,042            | "                 | Trace. | "    |
| "   | 17              | ...             | ...    | 36.5   | 37.4   | 38.0 | 40           | 40   | 12                  | 28      | "        | "         | 1,044            | "                 | "      | "    |
| 17th.—Swelling hardly perceptible.  |                 |                 |        |        |        |      |              |      |                     |         |          |           |                  |                   |        |      |
| "   | 18              | ...             | ...    | 36.2   | 37.1   | 37.8 | 32           | 48   | 20                  | 28      | "        | "         | 1,040            | "                 | Nil.   | "    |
| "   | 19              | ...             | ...    | 36.6   | 37.4   | 38.2 | 36           | 40   | 16                  | 24      | "        | "         | 1,038            | "                 | "      | "    |
| 19th.—Swelling entirely disappeared.  |                 |                 |        |        |        |      |              |      |                     |         |          |           |                  |                   |        |      |
| "   | 20              | ...             | ...    | 36.2   | 36.7   | 38.4 | 48           | 48   | 12                  | 20      | "        | "         | 1,034            | "                 | "      | "    |
| "   | 21              | ...             | ...    | 35.2   | 36.4   | 37.7 | 36           | 48   | 16                  | 16      | "        | "         | 1,028            | "                 | "      | "    |
| "   | 22              | ...             | ...    | 36.5   | 38.1   | 39.2 | 40           | 52   | 12                  | 20      | "        | "         | 1,036            | "                 | "      | "    |
| "   | 23              | ...             | ...    | 36.6   | 38.2   | 38.6 | 44           | 52   | 20                  | 20      | "        | "         | 1,048            | "                 | "      | "    |
| "   | 24              | ...             | ...    | 36.4   | 38.3   | 39.2 | 36           | 56   | 12                  | 20      | "        | "         | 1,050            | "                 | "      | "    |
| "   | 25              | ...             | ...    | 37.3   | 38.3   | 38.5 | 52           | 52   | 12                  | 24      | "        | "         | 1,056            | "                 | "      | "    |
| "   | 26              | ...             | ...    | 36.5   | 37.7   | 39.0 | 52           | 48   | 16                  | 28      | "        | "         | 1,044            | "                 | "      | "    |
| "   | 27              | ...             | ...    | 37.0   | 38.5   | 39.4 | 40           | 52   | 16                  | 32      | "        | "         | 1,026            | "                 | "      | "    |
| "   | 28              | ...             | ...    | 37.3   | 38.0   | 38.8 | 48           | 52   | 24                  | 32      | "        | "         | 1,064            | "                 | "      | "    |
| "   | 29              | ...             | ...    | 36.5   | 38.0   | 39.1 | 40           | 56   | 12                  | 28      | "        | "         | 1,016            | "                 | "      | "    |
| "   | 30              | ...             | ...    | 37.7   | 38.6   | 39.3 | 48           | 52   | 24                  | 36      | "        | "         | 1,064            | "                 | "      | "    |
| "   | 31              | ...             | ...    | 38.3   | 39.3   | 39.2 | 52           | 56   | 32                  | 32      | "        | "         | 1,054            | "                 | "      | "    |
| April   | 1               | ...             | ...    | 38.0   | 39.0   | 39.1 | 52           | 56   | 24                  | 32      | "        | "         | 1,050            | "                 | "      | "    |
| "   | 2               | ...             | ...    | 38.0   | 38.6   | 38.6 | 48           | 52   | 24                  | 32      | "        | "         | No urine passed. |                   |        |      |
| "   | 3               | ...             | ...    | 37.5   | 37.7   | 38.3 | 48           | 48   | 24                  | 32      | "        | "         | 1,060            | Alkaline.         | "      | "    |
| "   | 4               | ...             | ...    | 37.2   | 37.7   | 38.2 | 40           | 48   | 24                  | 24      | "        | "         | No urine passed. |                   |        |      |
| "   | 5               | ...             | ...    | 37.3   | 38.7   | 38.6 | 48           | 56   | 20                  | 32      | "        | "         | 1,047            | Alkaline.         | "      | "    |
| "   | 6               | ...             | ...    | 36.2   | 37.6   | 38.0 | 36           | 44   | 20                  | 28      | "        | "         | 1,024            | "                 | "      | "    |
| 6th.—The animal is getting weaker and losing flesh, although the appetite is always good.   |                 |                 |        |        |        |      |              |      |                     |         |          |           |                  |                   |        |      |
| "   | 7               | ...             | ...    | 37.3   | 38.2   | 38.0 | 52           | 48   | 20                  | 32      | Absent.  | Turbid.   | 1,042            | Alkaline.         | "      | "    |
| "   | 8               | ...             | ...    | 36.1   | 38.0   | 38.3 | 48           | 48   | 20                  | 28      | "        | "         | 1,046            | "                 | "      | "    |
| "   | 9               | ...             | ...    | 36.1   | 38.0   | 38.5 | 36           | 48   | 16                  | 24      | "        | "         | 1,048            | "                 | "      | "    |
| "   | 10              | ...             | ...    | 37.4   | 38.4   | 38.5 | 44           | 48   | 20                  | 24      | "        | "         | 1,064            | "                 | "      | "    |
| "   | 11              | ...             | ...    | 37.1   | 38.1   | 37.8 | 44           | 44   | 24                  | 24      | "        | "         | 1,030            | "                 | "      | "    |
| "   | 12              | ...             | ...    | 36.8   | 37.7   | 37.8 | 48           | 44   | 20                  | 12      | "        | "         | 1,058            | "                 | "      | "    |
| "   | 13              | ...             | ...    | 36.7   | 38.3   | 37.5 | 40           | 44   | 16                  | 16      | "        | "         | 1,038            | "                 | "      | "    |
| "   | 14              | ...             | ...    | 36.5   | 37.3   | 38.5 | 44           | 52   | 16                  | 20      | "        | "         | 1,040            | "                 | "      | "    |
| "   | 15              | ...             | ...    | 36.0   | 38.1   | 38.5 | 40           | 52   | 20                  | 24      | "        | "         | 1,040            | "                 | "      | "    |
| 15th.—The animal continues to lose flesh. Appetite good.  |                 |                 |        |        |        |      |              |      |                     |         |          |           |                  |                   |        |      |
| "   | 16              | ...             | ...    | 37.0   | 37.4   | 37.8 | 48           | 48   | 24                  | 20      | Absent.  | "         | 1,056            | "                 | "      | "    |
| "   | 17              | ...             | ...    | 35.8   | 37.7   | 38.6 | 44           | 52   | 16                  | 24      | "        | "         | 1,052            | "                 | "      | "    |
| "   | 18              | ...             | ...    | 36.1   | 38.4   | 38.7 | 36           | 52   | 20                  | 28      | "        | "         | 1,046            | "                 | "      | "    |
| "   | 19              | ...             | ...    | 36.3   | 38.4   | 38.6 | 40           | 48   | 16                  | 36      | "        | "         | 1,044            | "                 | "      | "    |
| "   | 20              | ...             | ...    | 36.2   | 38.2   | 38.3 | 40           | 56   | 20                  | 32      | "        | "         | 1,040            | "                 | "      | "    |
| "   | 21              | ...             | ...    | 35.7   | 38.0   | 38.0 | 40           | 60   | 16                  | 36      | "        | "         | 1,056            | "                 | "      | "    |
| "   | 22              | ...             | ...    | 35.0   | 37.4   | 37.6 | 36           | 52   | 12                  | 32      | "        | "         | 1,030            | "                 | "      | "    |



| Date.  |    | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Urine.  |         |                  |               |                   |      |     |
|--|----|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|---------|---------|------------------|---------------|-------------------|------|-----|
|  |    |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | Colour. | Sp. Gr. | Reaction.        | Albu-<br>men. | Hippuric<br>Acid. |      |     |
| 1893.  |    |                 |                 |        |        |        |      |              |      |                     |         |         |                  |               |                   |      |     |
| April  | 23 | ...             | ...             | 35.3   | 37.8   | 37.8   | 40   | 48           | 12   | 16                  | Absent. | Turbid. | 1,048            | Alkaline.     | Nil.              | Nil. |     |
| "  | 24 | ...             | ...             | 35.2   | 37.7   | 38.1   | 48   | 48           | 16   | 12                  | "       | "       | 1,030            | "             | "                 | "    |     |
| "  | 25 | ...             | ...             | 35.7   | 38.0   | 37.1   | 40   | 45           | 14   | 10                  | "       | "       | No urine passed. |               |                   | ...  | ... |
| "  | 26 | ...             | ...             | 35.6   | 37.7   | 38.6   | 40   | 52           | 12   | 20                  | "       | "       | 1,052            | Alkaline.     | "                 | "    |     |
| "  | 27 | ...             | ...             | 35.4   | 38.4   | 38.7   | 36   | 51           | 16   | 20                  | "       | "       | 1,038            | "             | "                 | "    |     |
| "  | 28 | ...             | ...             | 35.4   | 37.1   | 38.0   | 52   | 48           | 16   | 12                  | "       | "       | 1,048            | "             | "                 | "    |     |
| "  | 29 | ...             | ...             | 35.1   | 37.7   | 37.7   | 32   | 51           | 12   | 20                  | "       | "       | 1,040            | "             | "                 | "    |     |
| 29th.—The animal is rapidly losing flesh, and becoming very weak. The appetite continues good. |    |                 |                 |        |        |        |      |              |      |                     |         |         |                  |               |                   |      |     |
| "  | 30 | ...             | ...             | 35.0   | 37.4   | 37.7   | 32   | 46           | 12   | 21                  | Absent. | "       | No urine passed. |               |                   | "    | "   |
| May  | 1  | ...             | ...             | 35.0   | 36.8   | 37.6   | 28   | 45           | 12   | 18                  | "       | Turbid. | 1,046            | Alkaline.     | "                 | "    |     |
| "  | 2  | ...             | ...             | 35.0   | 36.8   | 38.1   | 24   | 44           | 12   | 16                  | "       | "       | 1,049            | "             | "                 | "    |     |
| "  | 3  | ...             | ...             | 35.0   | 36.5   | 38.0   | 36   | 52           | 12   | 24                  | "       | "       | 1,040            | "             | "                 | "    |     |
| "  | 4  | ...             | ...             | 35.0   | 37.1   | 37.6   | 32   | 36           | 12   | 12                  | "       | "       | 1,042            | "             | "                 | "    |     |
| 4th.—The animal is very weak, but continues to walk about.                                     |    |                 |                 |        |        |        |      |              |      |                     |         |         |                  |               |                   |      |     |
| "  | 5  | ...             | ...             | ...    | ...    | ...    | ...  | ...          | ...  | ...                 | ...     | ...     | ...              | ...           | ...               | ...  |     |
| 5th.—Death at 7.45 A.M.  |    |                 |                 |        |        |        |      |              |      |                     |         |         |                  |               |                   |      |     |

*Autopsy.*—Examination 3 $\frac{3}{4}$  hours *post mortem*.

*Thorax.*—

*Pleural cavities.*—Each contains about 10 ozs. of a yellow coloured fluid.

*Lungs.*—Apices emphysematous. The tissues of the organs contain numerous hard calcareous bodies, white in colour, which on section are found to contain yellow limpid fluid. The pericardial sac is free from fluid.

*Heart.*—Weighs 13 ozs. The base of the organ is surrounded with jelly-like material. *On section*, tissues healthy in appearance.

*Abdominal cavity.*—Contains four ounces of a pale yellow coloured fluid.

*Liver.*—Weighs 2 lbs. 2 $\frac{1}{2}$  ozs. There are numerous red spots dotted over the posterior surface, and a few calcareous nodules on interior surface. Tissues present a nutmeg condition, and are friable.

*Spleen.*—Weighs 7 ozs., organ petechiated. *On section*, dark in colour; tissues firm and healthy.

*Kidneys.*—Right weighs 5 ozs. externally petechiated. *On section*, the medullary portion is dark red in colour. Left weighs 4 $\frac{1}{2}$  ozs., is petechiated and presents one calcareous nodule on its outer surface.

*Stomach.*—*Cuticular* portion congested, tumour  $\frac{3}{4}$ " diameter, one-half inch from villous portion. Internal coat covered with numerous parasites and *bots*, tumour *on section*  $\frac{1}{2}$ " deep, contains parasites.

*Small Intestines.*—Contain numerous parasites, *Ascaris megalcephala* 8 $\frac{1}{2}$ " in length. The mucous membrane is congested in patches.

*Cæcum.*—Contains numerous parasites.

#### MONKEY I.—(*Macacus radiatus*) small variety.

August 1, 1891.—Temperature A.M. 38.4°C. P.M. 39.0°C. Blood healthy.

" 2. Temperature A.M. 38.5°C. P.M. 39.4°C. Blood healthy.

" 3. " " 38.7°C. " 38.7°C. "

" 4. " " 38.4°C. " 39.2°C. "

" 5. 3 P.M.—Inoculated subcutaneously in the right inguinal region with 0.5c.c. of blood containing numerous hæmatozoa, taken from the heart of a rat (*Mus decumanus*) immediately after death. Temperature A.M. 39.3°C., P.M. 39.4°C. Blood healthy.

" 6. Temperature A.M. 39.3°C. P.M. 39.5°C. No hæmatozoa in the blood.

" 7. " " 39.0°C. " 39.4°C. " "

" 8. " " 38.8°C. " 39.8°C. " "

" 9. The white corpuscles of the blood are increased in number, there are numerous masses of colourless protoplasm with fine spiculæ like those of an echinoderm. These masses are from 2 to 5 times the size of white blood corpuscles. The red corpuscles are normal in character. Temperature A.M. 40°C. No hæmatozoa in the blood. Temp. P.M. 39.0°C.

" 10. Temperature A.M. 38.7°C. P.M. 39.2°C. No hæmatozoa in the blood.

" 11. " " 38.8°C. " 39.0°C. " "

" 12. " " 38.5°C. " 39.2°C. " "

" 13. " " 38.7°C. " 39.3°C. " "

" 14. " " 38.8°C. " 39.2°C. " "

" 15. " " 38.7°C. " 39.3°C. " "

" 16. " " 38.8°C. " 39.1°C. " "

" 17. " " 39.0°C. " 39.4°C. " "

" 18. " " 39.1°C. " 39.3°C. " "

" 19. " " 39.0°C. " 39.4°C. " "



|           |     |  |              |              |                            |
|-----------|-----|--|--------------|--------------|----------------------------|
| August    | 20. | Temperature  | A.M. 38.4°C. | P.M. 39.2°C. | No hæmatozoa in the blood. |
| "         | 21. | "  | " 39.1°C.    | " 39.1°C.    | " "                        |
| "         | 22. | "  | " 38.3°C.    | " 39.2°C.    | " "                        |
| "         | 23. | "  | " 38.7°C.    | " 38.8°C.    | " "                        |
| "         | 24. | "  | " 38.4°C.    | " 39.0°C.    | " "                        |
| "         | 25. | "  | " 38.4°C.    | " 39.1°C.    | " "                        |
| "         | 26. | "  | " 40.7°C.    | " 39.1°C.    | " "                        |
| "         | 27. | "  | " 38.8°C.    | " 39.2°C.    | " "                        |
| "         | 28. | "  | " 39.7°C.    | " 39.3°C.    | " "                        |
| "         | 29. | "  | " 39.1°C.    | " 39.2°C.    | " "                        |
| "         | 30. | "  | " 39.7°C.    | " 39.4°C.    | " "                        |
| "         | 31. | "  | " 39.5°C.    | " 39.6°C.    | " "                        |
| September | 1.  | "  | " 38.6°C.    | " 39.2°C.    | " "                        |
| "         | 2.  | The animal was re-inoculated with 0.5c.c. of blood containing numerous hæmatozoa, taken from the heart of a rat ( <i>Mus decumanus</i> ) immediately after death. Temperature A.M. 38.7°C. No hæmatozoa in the blood. Temperature P.M. 39.3°C. |              |              |                            |
| "         | 3.  | Temperature  | A.M. 39.0°C. | P.M. 39.5°C. | No hæmatozoa in the blood. |
| "         | 4.  | "  | " 39.1°C.    | " 39.7°C.    | " "                        |
| "         | 5.  | "  | " 39.1°C.    | " 39.4°C.    | " "                        |
| "         | 6.  | "  | " 39.0°C.    | " 38.6°C.    | " "                        |
| "         | 7.  | "  | " 37.8°C.    | " 39.1°C.    | " "                        |
| "         | 8.  | "  | " 38.3°C.    | " 39.0°C.    | " "                        |
| "         | 9.  | "  | " 38.3°C.    | " 39.1°C.    | " "                        |
| "         | 10. | "  | " 38.4°C.    | " 39.2°C.    | " "                        |
| "         | 11. | "  | " 39.5°C.    | " 39.7°C.    | " "                        |
| "         | 12. | "  | " 38.3°C.    | " 39.4°C.    | " "                        |
| "         | 13. | "  | " 38.8°C.    | " 38.8°C.    | " "                        |
| "         | 14. | "  | " 40.0°C.    | " 41.1°C.    | " "                        |
| "         | 15. | "  | " 39.2°C.    | " 39.4°C.    | " "                        |
| "         | 16. | "  | " 38.3°C.    | " 39.0°C.    | " "                        |
| "         | 17. | "  | " 40.6°C.    | " 39.6°C.    | " "                        |
| "         | 18. | "  | " 40.0°C.    | " 39.8°C.    | " "                        |
| "         | 19. | "  | " 38.5°C.    | " 38.5°C.    | " "                        |
| "         | 20. | "  | " 38.0°C.    | " 38.6°C.    | " "                        |
| "         | 21. | "  | " 38.2°C.    | " 40.7°C.    | " "                        |
| "         | 22. | "  | " 39.5°C.    | " 39.2°C.    | " "                        |
| "         | 23. | "  | " 38.0°C.    | " 39.1°C.    | " "                        |
| "         | 24. | "  | " 38.2°C.    | " 39.3°C.    | " "                        |
| "         | 25. | The animal appears to be ill, but it runs about the cage as usual. Temperature A.M. 40.9°C. No hæmatozoa in blood. Temperature P.M. 39.5°C.  |              |              |                            |
| "         | 26. | Condition unchanged. Temperature A.M. 40.8°C. No hæmatozoa in the blood. Temperature P.M. 39.3°C.  |              |              |                            |
| "         | 27. | "  | "            | " 39.6°C.    | " " 39.4°C.                |
| "         | 28. | "  | "            | " 40.4°C.    | " " 39.5°C.                |
| "         | 29. | The breathing is quickened, and the animal is dull and sleepy. Temperature A.M. 40°C. No hæmatozoa in the blood. Temperature P.M. 40°C.  |              |              |                            |
| "         | 30. | Condition worse. Temperature A.M. 38.6°C. No hæmatozoa in the blood. Temperature P.M. 38.7°C.  |              |              |                            |
| October   | 1.  | Temperature A.M. 35.2°C. Death.  |              |              |                            |

*Post mortem.*—The body is well nourished.

*Lungs.*—Both organs are dotted over with small dark purple irregular shaped petechiæ, many being only the size of a pin's head. The base of the right inferior lobe is covered with a layer of yellow lymph about a line in thickness.

*Pericardium.*—Is distended with clear fluid. There is no pericarditis.

*Heart.*—Healthy.

*Liver.*—Largo, firm; on section, the tissues appear healthy.

*Spleen.*—Small; on section, tissues present a healthy appearance.

*Stomach.*—Healthy.

*Bladder.*—Do.

*Kidneys.*—Do.

*Remarks.*—This animal was inoculated sub-cutaneously on the 5th of August 1891, with 0.5c.c. of blood containing numerous hæmatozoa taken from the heart of a rat (*Mus decumanus*) immediately after death. The temperature of the animal rose slightly on the 9th, and there was an increase of white corpuscles in the blood, together with masses of colourless protoplasm, but no hæmatozoa. As no symptoms of Surra had developed by the 2nd September 1891, the animal was re-inoculated sub-cutaneously with the same quantity of blood from a similar source. On the 14th September, the temperature rose in the morning to 40°C. and in the evening to 41°C., but no hæmatozoa appeared in the blood.

The following morning the temperature was normal, and the animal appeared healthy. On the morning of the 25th September, the temperature had risen to 40.9°C. and the animal appeared ill, but the blood on microscopical examination revealed nothing. On the 29th the breathing was quick and the animal presented a dull, sleepy appearance. Death took place on the 1st October 1891. The autopsy revealed the presence of pleurisy and the surfaces of the lungs were petechiated, otherwise the organs were healthy.

Two Guinea pigs inoculated with fluid from the pericardial sac gave negative results.

## CAT No. II

Inoculated with 0·5 c.c. of blood, containing numerous hæmatozoa, taken from the Rat (*Mus decumanus*) immediately after death. Result negative.

Re-inoculation with 0·5 c.c. of blood taken 8 hours *post mortem* but containing swarms of hæmatozoa previous to death. Result negative.

| Date.          | Temperature °C. |        |        | Condition of Blood. | Date.   | Temperature °C. |        |        | Condition of Blood.   |
|----------------|-----------------|--------|--------|---------------------|---|-----------------|--------|--------|---|
|                | A.M.            | 1 P.M. | 5 P.M. |                     |   | A.M.            | 1 P.M. | 5 P.M. |   |
| 1893.          |                 |        |        |                     | 1893.   |                 |        |        |   |
| January 14 ... | ...             | ...    | 38·4   | Hæmatozoa absent.   | March 16 ...  | 39·4            | 39·6   | 39·5   | Hæmatozoa absent.   |
| " 15 ...       | 36·6            | 37·0   | 39·0   | " "                 | " 17 ...  | 39·3            | 39·4   | 39·6   | " "   |
| " 16 ...       | 38·4            | 39·0   | 39·6   | " "                 | " 18 ...  | 38·6            | 39·4   | 39·6   | " "   |
| " 17 ...       | 38·0            | 38·8   | 39·7   | " "                 | " 19 ...  | 39·3            | 39·1   | 39·2   | " "   |
| " 18 ...       | 38·0            | 39·4   | 39·1   | " "                 | " 20 ...  | 39·6            | 39·4   | 39·1   | " "   |
| " 19 ...       | 38·2            | 38·8   | 39·4   | " "                 | " 21 ...  | 39·0            | 39·3   | 39·6   | " "   |
| " 20 ...       | 38·8            | 39·1   | 39·6   | " "                 | " 22 ...  | 39·7            | 39·7   | 39·6   | " "   |
| " 21 ...       | 39·3            | 39·6   | 39·2   | " "                 | " 23 ...  | 39·2            | 39·6   | 39·4   | " "   |
| " 22 ...       | 39·2            | 39·1   | 39·5   | " "                 | " 24 ...  | 39·6            | 39·6   | 39·8   | " "   |
| " 23 ...       | 38·8            | 38·8   | 39·4   | " "                 | " 25 ...  | 39·6            | 39·4   | 39·4   | " "   |
| " 24 ...       | 39·0            | 39·2   | 39·3   | " "                 | " 26 ...  | 39·4            | 39·0   | 39·0   | " "   |
| " 25 ...       | 39·0            | 39·2   | 39·6   | " "                 | " 27 ...  | 38·8            | 39·4   | 39·6   | " "   |
| " 26 ...       | 39·0            | 39·4   | 39·4   | " "                 | " 28 ...  | 39·0            | 39·8   | 39·4   | " "   |
| " 27 ...       | 39·0            | 39·2   | 39·3   | " "                 | " 29 ...  | 38·8            | 39·2   | 39·2   | " "   |
| " 28 ...       | 39·0            | 39·0   | 39·1   | " "                 | " 30 ...  | 39·6            | 39·2   | 39·6   | " "   |
| " 29 ...       | 39·2            | 39·4   | 39·2   | " "                 | " 31 ...  | 39·4            | 39·4   | 39·3   | " "   |
| " 30 ...       | 38·8            | 39·2   | 39·4   | " "                 | The investigation was continued for a further period of 112 days with negative results. |                 |        |        | The animal was re-inoculated with Surra blood, taken from Horse XCIII 8 hours <i>post mortem</i> on 7th September 1893. |
| " 31 ...       | 39·0            | 39·4   | 38·9   | " "                 |   |                 |        |        |   |
| February 1 ... | 38·6            | 39·2   | 39·0   | " "                 | September 7 ...   | ...             | ...    | 38·7   | Hæmatozoa absent.   |
| " 2 ...        | 38·8            | 39·2   | 39·0   | " "                 | " 8 ...   | 38·8            | 39·2   | 39·6   | " "   |
| " 3 ...        | 39·1            | 39·0   | 39·0   | " "                 | " 9 ...   | 38·7            | 37·3   | 38·2   | " "   |
| " 4 ...        | 38·8            | 39·2   | 39·2   | " "                 | " 10 ...  | 38·2            | 38·6   | 39·0   | " "   |
| " 5 ...        | 39·0            | 38·9   | 39·2   | " "                 | " 11 ...  | 38·2            | 37·4   | 38·6   | " "   |
| " 6 ...        | 39·6            | 39·2   | 39·4   | " "                 | " 12 ...  | 38·4            | 37·8   | 38·8   | " "   |
| " 7 ...        | 38·8            | 39·1   | 39·2   | " "                 | " 13 ...  | 38·6            | 38·6   | 38·8   | " "   |
| " 8 ...        | 39·1            | 39·4   | 39·0   | " "                 | " 14 ...  | 38·5            | 38·1   | 38·3   | " "   |
| " 9 ...        | 39·2            | 39·4   | 39·0   | " "                 | " 15 ...  | 38·6            | 38·2   | 38·6   | " "   |
| " 10 ...       | 39·8            | 39·4   | 39·6   | " "                 | " 16 ...  | 38·8            | 38·2   | 38·6   | " "   |
| " 11 ...       | 39·2            | 39·6   | 40·0   | " "                 | " 17 ...  | 38·5            | 38·6   | 38·8   | " "   |
| " 12 ...       | 40·2            | 40·6   | 40·8   | " "                 | " 18 ...  | 38·5            | 38·0   | 38·6   | " "   |
| " 13 ...       | 40·0            | 40·2   | 40·0   | " "                 | " 19 ...  | 38·4            | 38·6   | 39·0   | " "   |
| " 14 ...       | 39·4            | 39·2   | 39·8   | " "                 | " 20 ...  | 38·2            | 38·2   | 39·3   | " "   |
| " 15 ...       | 39·1            | 39·4   | 39·6   | " "                 | " 21 ...  | 38·2            | 38·6   | 38·2   | " "   |
| " 16 ...       | 39·8            | 39·6   | 39·8   | " "                 | " 22 ...  | 37·8            | 38·0   | 38·2   | " "   |
| " 17 ...       | 40·0            | 40·2   | 40·4   | " "                 | " 23 ...  | 37·5            | 38·0   | 38·4   | " "   |
| " 18 ...       | 39·4            | 39·0   | 40·0   | " "                 | " 24 ...  | 38·6            | 38·4   | 37·8   | " "   |
| " 19 ...       | 39·2            | 39·1   | 39·2   | " "                 | " 25 ...  | 38·6            | 38·2   | 38·4   | " "   |
| " 20 ...       | 38·6            | 39·2   | 39·7   | " "                 | " 26 ...  | 38·2            | 39·2   | 39·0   | " "   |
| " 21 ...       | 38·4            | 38·6   | 38·8   | " "                 | " 27 ...  | 38·0            | 38·2   | 38·8   | " "   |
| " 22 ...       | 37·8            | 38·8   | 39·4   | " "                 | " 28 ...  | 37·6            | 38·2   | 39·0   | " "   |
| " 23 ...       | 38·8            | 39·2   | 39·6   | " "                 | " 29 ...  | 38·3            | 38·2   | 38·6   | " "   |
| " 24 ...       | 38·8            | 39·2   | 39·4   | " "                 | " 30 ...  | 38·4            | 38·2   | 38·6   | " "   |
| " 25 ...       | 38·6            | 38·3   | 39·8   | " "                 |   |                 |        |        |   |
| " 26 ...       | 39·0            | 40·2   | 39·8   | " "                 | October 1 ...   | 38·5            | 38·4   | 38·8   | " "   |
| " 27 ...       | 39·4            | 39·0   | 39·6   | " "                 | " 2 ...   | 38·4            | 38·8   | 39·4   | " "   |
| " 28 ...       | 38·4            | 39·6   | 39·6   | " "                 | " 3 ...   | 38·2            | 38·5   | 38·4   | " "   |
| March 1 ...    | 38·8            | 39·6   | 39·4   | " "                 | " 4 ...   | 38·2            | 38·2   | 38·6   | " "   |
| " 2 ...        | 39·3            | 40·1   | 40·0   | " "                 | " 5 ...   | 39·2            | 39·6   | 39·6   | " "   |
| " 3 ...        | 39·0            | 39·8   | 39·6   | " "                 | " 6 ...   | 40·0            | 39·1   | 38·6   | " "   |
| " 4 ...        | 39·0            | 39·1   | 39·2   | " "                 | " 7 ...   | 39·0            | 38·9   | 37·7   | " "   |
| " 5 ...        | 39·4            | 39·6   | 39·7   | " "                 | " 8 ...   | 40·6            | 40·8   | 40·8   | " "   |
| " 6 ...        | 39·6            | 39·3   | 39·8   | " "                 | " 9 ...   | 40·0            | 40·2   | 40·0   | " "   |
| " 7 ...        | 39·0            | 39·2   | 39·2   | " "                 | " 10 ...  | 39·8            | 40·0   | 39·6   | " "   |
| " 8 ...        | 39·1            | 39·5   | 39·6   | " "                 | " 11 ...  | 39·4            | 39·8   | 39·6   | " "   |
| " 9 ...        | 39·8            | 40·0   | 39·6   | " "                 | " 12 ...  | 39·0            | 40·6   | 39·0   | " "   |
| " 10 ...       | 38·8            | 39·2   | 39·2   | " "                 | " 13 ...  | 40·1            | 39·6   | 39·8   | " "   |
| " 11 ...       | 38·0            | 39·2   | 39·3   | " "                 | " 14 ...  | 39·0            | 39·2   | 39·7   | " "   |
| " 12 ...       | 39·2            | 39·0   | 39·2   | " "                 |   |                 |        |        |   |
| " 13 ...       | 39·3            | 39·2   | 39·2   | " "                 |   |                 |        |        |   |
| " 14 ...       | 39·6            | 39·6   | 39·4   | " "                 |   |                 |        |        |   |
| " 15 ...       | 39·2            | 39·4   | 39·4   | " "                 |   |                 |        |        |   |



| Date.          | Temperature °C. |        |        | Condition of Blood. | Date.   | Temperature °C. |        |        | Condition of Blood. |
|----------------|-----------------|--------|--------|---------------------|---|-----------------|--------|--------|---------------------|
|                | A.M.            | 1 P.M. | 5 P.M. |                     |   | A.M.            | 1 P.M. | 5 P.M. |                     |
| 1893.          |                 |        |        |                     | 1892.   |                 |        |        |                     |
| October 15 ... | 39.2            | 40.0   | 39.6   | Hæmatozoa absent.   | October 30 ...  | 37.8            | 38.0   | 38.4   | Hæmatozoa absent.   |
| " 16 ...       | 39.0            | 39.2   | 39.4   | " "                 | " 31 ...  | 38.1            | 37.2   | 38.4   | " "                 |
| " 17 ...       | 39.0            | 39.0   | 39.6   | " "                 | <i>Remarks.</i> —This animal was inoculated with the soiled blood of the Rat ( <i>Mus decumanus</i> ), but as the result was negative, it was re-inoculated 8 months later with soiled Horse-Surra blood, 8 hours <i>post mortem</i> , but the results were again negative. Following inoculation in each instance, the maximum temperature of 40.8° C. was reached on the 29th and 31st day respectively, but no hæmatozoa were discovered on microscopical examination. |                 |        |        |                     |
| " 18 ...       | 38.7            | 39.2   | 40.0   | " "                 |   |                 |        |        |                     |
| " 19 ...       | 39.0            | 39.3   | 39.8   | " "                 |   |                 |        |        |                     |
| " 20 ...       | 38.8            | 39.1   | 39.9   | " "                 |   |                 |        |        |                     |
| " 21 ...       | 38.0            | 38.6   | 38.9   | " "                 |   |                 |        |        |                     |
| " 22 ...       | 38.5            | 38.4   | 39.6   | " "                 |   |                 |        |        |                     |
| " 23 ...       | 38.4            | 38.4   | 39.0   | " "                 |   |                 |        |        |                     |
| " 24 ...       | 38.0            | 38.5   | 39.2   | " "                 |   |                 |        |        |                     |
| " 25 ...       | 38.4            | 38.8   | 39.8   | " "                 |   |                 |        |        |                     |
| " 26 ...       | 37.0            | 37.8   | 38.4   | " "                 |   |                 |        |        |                     |
| " 27 ...       | 37.0            | 38.0   | 38.6   | " "                 |   |                 |        |        |                     |
| " 28 ...       | 38.5            | 37.2   | 39.0   | " "                 |   |                 |        |        |                     |
| " 29 ...       | 38.8            | 39.4   | 39.6   | " "                 |   |                 |        |        |                     |

RABBIT No. I.

December 7th, 1890.—Inoculated subcutaneously in the right inguinal region, with 0.5 c.c. of blood containing numerous hæmatozoa from the heart of a rat (*Mus decumanus*), taken immediately after the death of the animal.

|            |                       |   |               |                                       |
|------------|-----------------------|---|---------------|---------------------------------------|
| December 7 | Temperature A.M. .... |   | P.M. 40.4 °C. | Blood healthy.                        |
| " 8 ...    | "                     | " | 40.7 °C.      | P.M. 40.2 °C.                         |
| " 9 ...    | "                     | " | 40.1 °C.      | " 40.2 °C.                            |
| " 10 ...   | "                     | " | 39.9 °C.      | " 40.0 °C. No hæmatozoa in the blood. |
| " 11 ...   | "                     | " | 39.5 °C.      | " 39.6 °C.                            |
| " 12 ...   | "                     | " | 39.6 °C.      | " 39.7 °C.                            |
| " 13 ...   | "                     | " | 39.7 °C.      | " 39.9 °C.                            |
| " 14 ...   | "                     | " | 39.3 °C.      | " 39.6 °C.                            |
| " 15 ...   | "                     | " | 40.0 °C.      | " 39.8 °C.                            |
| " 16 ...   | "                     | " | 39.9 °C.      | " 40.0 °C.                            |
| " 17 ...   | "                     | " | 39.7 °C.      | " 39.9 °C.                            |
| " 18 ...   | "                     | " | 39.5 °C.      | " 40.0 °C.                            |
| " 19 ...   | "                     | " | 40.1 °C.      | " 40.0 °C.                            |
| " 20 ...   | "                     | " | 39.8 °C.      | " 39.6 °C.                            |
| " 21 ...   | "                     | " | 39.7 °C.      | " 39.6 °C.                            |
| " 22 ...   | "                     | " | 39.8 °C.      | " 39.7 °C.                            |
| " 23 ...   | "                     | " | 40.2 °C.      | " 40.4 °C.                            |
| " 24 ...   | "                     | " | 40.3 °C.      | " 40.0 °C.                            |
| " 25 ...   | "                     | " | 39.8 °C.      | " 39.9 °C.                            |
| " 26 ...   | "                     | " | 39.6 °C.      | " 39.4 °C.                            |
| " 27 ...   | "                     | " | 39.4 °C.      | " 39.6 °C.                            |
| " 28 ...   | "                     | " | 39.3 °C.      | " 39.6 °C.                            |
| " 29 ...   | "                     | " | 39.1 °C.      | " 39.4 °C.                            |
| " 30 ...   | "                     | " | 39.2 °C.      | " .....                               |

Microscopical examination of blood, &c., discontinued from this date, as no hæmatozoa appeared.

RABBIT No. II.

December 7th, 1890, 3-30 P.M.—Inoculated subcutaneously in the left ear with 0.2 c.c. of blood taken from the heart of a rat (*Mus decumanus*).

|            |   |                       |          |   |
|------------|---|-----------------------|----------|---|
| December 8 |   | Temperature A.M. .... |          | P.M. 39.9 °C.                           |
| " 9 ...    | " | "                     | 40.0 °C. | P.M. 38.7 °C. No hæmatozoa in the blood |
| " 10 ...   | " | "                     | 39.7 °C. | " 40.1 °C.                              |
| " 11 ...   | " | "                     | 39.7 °C. | " 39.9 °C.                              |
| " 12 ...   | " | "                     | 39.8 °C. | " 39.7 °C.                              |
| " 13 ...   | " | "                     | 39.7 °C. | " 39.7 °C.                              |
| " 14 ...   | " | "                     | 39.3 °C. | " 39.5 °C.                              |
| " 15 ...   | " | "                     | 39.6 °C. | " 40.0 °C.                              |
| " 16 ...   | " | "                     | 39.3 °C. | " 39.4 °C.                              |
| " 17 ...   | " | "                     | 39.6 °C. | " 40.3 °C.                              |
| " 18 ...   | " | "                     | 40.0 °C. | " 39.3 °C.                              |
| " 19 ...   | " | "                     | 39.2 °C. | " 39.4 °C.                              |
| " 20 ...   | " | "                     | 39.7 °C. | " 40.0 °C.                              |
| " 21 ...   | " | "                     | 39.9 °C. | " 39.3 °C.                              |
| " 22 ...   | " | "                     | 40.0 °C. | " 39.9 °C.                              |
| " 22 ...   | " | "                     | 40.0 °C. | " 39.9 °C.                              |



|             |     |                     |          |      |          |                            |   |
|-------------|-----|---------------------|----------|------|----------|----------------------------|---|
| December 23 | ... | ...Temperature A.M. | 39.8 °C. | P.M. | 39.6 °C. | No hæmatozoa in the blood. |   |
| " 24        | ... | "                   | 39.2 °C. | "    | 39.5 °C. | "                          | " |
| " 25        | ... | "                   | 39.6 °C. | "    | 39.7 °C. | "                          | " |
| " 26        | ... | "                   | 39.8 °C. | "    | 39.8 °C. | "                          | " |
| " 27        | ... | "                   | 39.6 °C. | "    | 39.9 °C. | "                          | " |
| " 28        | ... | "                   | 39.8 °C. | "    | 39.5 °C. | "                          | " |
| " 29        | ... | "                   | 39.0 °C. | "    | 39.2 °C. | "                          | " |
| " 30        | ... | "                   | 39.4 °C. | "    | .....    | "                          | " |

*March 8th, 1891.*—This animal has a muco-purulent discharge from both nostrils, and the eyelids are closed by the drying of purulent secretion. The blood presents the character of Horse-Surra blood, but there are no hæmatozoa to be found in it.

*March 16th.*—The muco-purulent discharge from the nostrils and eyes has entirely disappeared; the blood is normal in appearance, and there are no hæmatozoa.

*March 31st.*—The animal eats very little, the breathing is laboured and quick. No hæmatozoa observed in blood.

*April 4th.*—Breathing very quick, appetite poor. No hæmatozoa in the blood.

*April 5th.*—Temperature P.M. 40.5 °C. No hæmatozoa in the blood. There are numerous refractile bodies in the blood.

|            |   |                  |          |      |          |                            |   |
|------------|---|------------------|----------|------|----------|----------------------------|---|
| April 6th. | — | Temperature A.M. | 40.5 °C. | P.M. | 40.7 °C. | No hæmatozoa in the blood. |   |
| " 7th.     | — | "                | 40.3 °C. | "    | 40.4 °C. | "                          | " |
| " 8th.     | — | "                | 40.1 °C. | "    | 41.1 °C. | "                          | " |
| " 9th.     | — | "                | 40.7 °C. | "    | 41.2 °C. | "                          | " |
| " 10th.    | — | "                | 40.8 °C. | "    | 40.7 °C. | "                          | " |
| " 11th.    | — | "                | 39.9 °C. | "    | 40.4 °C. | "                          | " |
| " 12th.    | — | "                | 39.7 °C. | "    | 39.8 °C. | "                          | " |

Several peculiar-shaped bodies in the blood; (i) a colourless proto-plasmic body, circular in form, with long fine rays or spicules projecting from its circumference; it is about twice the diameter of a white blood corpuscle; (ii) a long-shaped body blunt at one end and pointed at the other; the body gradually tapers from the blunt extremity until it ends in a point; it appears to have the power of contraction, and so to become shorter, but no power of progression. The length is twice the diameter of a white blood corpuscle, and the diameter  $\frac{1}{5}$ th of one at its widest part.

|             |   |                  |          |      |          |                            |   |
|-------------|---|------------------|----------|------|----------|----------------------------|---|
| April 13th. | — | Temperature A.M. | 40.1 °C. | P.M. | 40.3 °C. | No hæmatozoa in the blood. |   |
| " 14th.     | — | "                | 39.8 °C. | "    | 39.9 °C. | "                          | " |
| " 15th.     | — | "                | 39.8 °C. | "    | 39.7 °C. | "                          | " |
| " 16th.     | — | "                | 39.7 °C. | "    | 39.8 °C. | "                          | " |
| " 17th.     | — | "                | 39.5 °C. | "    | 39.6 °C. | "                          | " |
| " 18th.     | — | "                | 39.5 °C. | "    | 39.7 °C. | "                          | " |
| " 19th.     | — | "                | 39.4 °C. | "    | 39.6 °C. | "                          | " |
| " 20th.     | — | "                | 39.3 °C. | "    | 39.6 °C. | "                          | " |
| " 21st.     | — | "                | 40.4 °C. | "    | 40.6 °C. | "                          | " |
| " 22nd.     | — | "                | 39.8 °C. | "    | 39.9 °C. | "                          | " |
| " 23rd.     | — | "                | 40.3 °C. | "    | 40.9 °C. | "                          | " |
| " 24th.     | — | "                | 40.2 °C. | "    | 39.9 °C. | "                          | " |
| " 25th.     | — | "                | 39.8 °C. | "    | 39.7 °C. | "                          | " |
| " 26th.     | — | "                | 39.3 °C. | "    | 40.0 °C. | "                          | " |
| " 27th.     | — | "                | 39.7 °C. | "    | 40.4 °C. | "                          | " |
| " 28th.     | — | "                | 39.8 °C. | "    | 40.5 °C. | "                          | " |
| " 29th.     | — | "                | 39.8 °C. | "    | 40.4 °C. | "                          | " |
| " 30th.     | — | "                | 40.0 °C. | "    | 40.3 °C. | "                          | " |
| May 1st.    | — | "                | 40.2 °C. | "    | 40.4 °C. | "                          | " |
| " 2nd.      | — | "                | 39.8 °C. | "    | 39.8 °C. | "                          | " |
| " 3rd.      | — | "                | 40.3 °C. | "    | 40.6 °C. | "                          | " |
| " 4th.      | — | "                | 40.2 °C. | "    | 40.4 °C. | "                          | " |
| " 5th.      | — | "                | 39.8 °C. | "    | 40.1 °C. | "                          | " |
| " 6th.      | — | "                | 39.9 °C. | "    | 40.4 °C. | "                          | " |
| " 7th.      | — | "                | 40.2 °C. | "    | 40.5 °C. | "                          | " |
| " 8th.      | — | "                | 40.0 °C. | "    | 40.6 °C. | "                          | " |
| " 9th.      | — | "                | 40.3 °C. | "    | 41.1 °C. | "                          | " |
| " 10th.     | — | "                | 40.7 °C. | "    | 40.7 °C. | "                          | " |
| " 11th.     | — | "                | 40.5 °C. | "    | 40.8 °C. | "                          | " |
| " 12th.     | — | "                | 40.7 °C. | "    | 40.8 °C. | "                          | " |
| " 13th.     | — | "                | 40.5 °C. | "    | 40.8 °C. | "                          | " |
| " 14th.     | — | "                | 40.5 °C. | "    | 40.6 °C. | "                          | " |
| " 15th.     | — | "                | 40.2 °C. | "    | 40.5 °C. | "                          | " |
| " 16th.     | — | "                | 40.2 °C. | "    | 40.6 °C. | "                          | " |
| " 17th.     | — | "                | 40.3 °C. | "    | 40.3 °C. | "                          | " |
| " 18th.     | — | "                | 40.2 °C. | "    | 40.5 °C. | "                          | " |
| " 19th.     | — | "                | 40.2 °C. | "    | 40.4 °C. | "                          | " |
| " 20th.     | — | "                | 40.3 °C. | "    | 40.5 °C. | "                          | " |
| " 21st.     | — | "                | 40.1 °C. | "    | 40.5 °C. | "                          | " |
| " 22nd.     | — | "                | 40.2 °C. | "    | 40.6 °C. | "                          | " |
| " 23rd.     | — | "                | 40.3 °C. | "    | 40.4 °C. | "                          | " |
| " 24th.     | — | "                | 40.0 °C. | "    | 40.5 °C. | "                          | " |
| " 25th.     | — | "                | 40.1 °C. | "    | 39.9 °C. | "                          | " |
| " 26th.     | — | "                | 38.8 °C. | "    | 40.0 °C. | "                          | " |
| " 27th.     | — | "                | 39.1 °C. | "    | 40.2 °C. | "                          | " |

April 28th.—Temperature A.M. 39.5 °C. P.M. 40.3 °C. No hæmatozoa in the blood.  
 " 29th.— " 39.6 °C. " 40.2 °C. " "  
 " 30th.— " 39.6 °C. " 40.4 °C. " "  
 " 31st.— " 39.9 °C. " 40.5 °C. " "

The animal regained its normal condition but succumbed to diarrhœa at the commencement of the rains, 1891.

#### RABBITS INOCULATED WITH THE BLOOD OF RATS (MUS DECUMANUS).

July 23rd, 1892, 4-30 P.M.—Inoculated two rabbits with blood containing numerous hæmatozoa taken from the hearts of two rats (*Mus decumanus*); each animal received 0.5 c.c. of blood subcutaneously in the right inguinal region, and the same quantity in the left *tunica vaginalis testis*.

##### RABBIT No. III.

Temperature A.M. 40.2 °C.—Temperature P.M. 40.1 °C.

July 24th.—Temperature A.M. 39.3 °C. Temperature P.M. 39.6 °C. Hæmatozoa absent.

25th.—There are small refractile granules in the blood, the red corpuscles do not form rouleaux, but there is no increase in the number of the white. Temperature 39.3 °C. Temperature P.M. 41.2 °C. No hæmatozoa in the blood.

26th.—The animal is very dull, the left testicle is somewhat increased in size, the scrotal sac is red in colour and painful to the touch. Temperature A.M. 40.2 °C. There are a number of masses of granular protoplasm in the blood, and some round refractile bodies tinged yellow in colour. The animal died at 5 P.M.

Autopsy shortly after death, general peritonitis. Spleen small.

##### RABBIT No. IV.

July 23rd, 1892, 4-30 P.M.—Inoculated. Temperature previous to inoculation 40.3 °C., 5 P.M. 39.6 °C.

24th.—Temperature A.M. 40 °C., P.M. 40 °C. There are no hæmatozoa in the blood.

25th.—Temperature A.M. 40.4 °C. There are no hæmatozoa in the blood, but it contains some small yellow tinged refractile, and two protoplasmic bodies, somewhat circular in form, presenting sharp spines like an echinoderm. It is double the size of an ordinary white blood corpuscle. The red blood corpuscles do not form rouleaux, and there is no increase in the number of the white. Temperature P.M. 40 °C.

26th.—Temperature A.M. 39.6 °C. There are no hæmatozoa in the blood. Temperature P.M. 40 °C.

27th.—The animal appears bright, the appetite is good, the left scrotal sac is swollen, red, hot, and painful. Temperature A.M. 39.8 °C. The blood contains a few granular bodies, but no hæmatozoa; the white corpuscles are not increased in number. Temperature P.M. 40 °C.

28th.—The general condition of the animal is the same as yesterday. The left scrotal sac is however more swollen, and a small lump can be felt at its lower extremity; this is the seat of the injected blood. Temperature A.M. 39.6 °C. There are no hæmatozoa in the blood. Temperature P.M. 39.8 °C.

29th.—Temperature A.M. 39.6 °C. There are no hæmatozoa in the blood. Temperature P.M. 40 °C.

30th.—Temperature A.M. 39.7 °C. The left scrotal sac presents a dark red colour, and the swelling therein has increased in dimensions. Temperature P.M. 40 °C. There are no hæmatozoa in the blood.

31st.—The condition of the animal is unchanged. Temperature A.M. 39.7 °C. The hæmatozoa are absent from the blood. Temperature P.M. 40.3 °C.

1st August.—Condition unchanged. Temperature A.M. 40.2 °C. Hæmatozoa absent. Temperature P.M. 40.8 °C.

2nd.— " " A.M. 40.3 °C. " " P.M. 41.0 °C.

3rd.— " " A.M. 40.2 °C. " " P.M. 40.3 °C.

4th.— " " A.M. 40.5 °C. " " P.M. 41.0 °C.

5th.—The left scrotal sac is still red in colour, and the swelling, which remained stationary for some days, now shows signs of suppurating. Temperature A.M. 40.2 °C. The red blood corpuscles form normal rouleaux, and there is no increase in the number of white corpuscles. Hæmatozoa absent. Temperature P.M. 40.3 °C.

6th.—Temperature A.M. 39.3 °C. Hæmatozoa absent. Temperature P.M. 39.8 °C.

7th.—The red corpuscles appear healthy and form normal rouleaux; the white contain numerous highly refractile bodies, but are not increased in number. Temperature A.M. 39.7 °C. Hæmatozoa absent. Temperature P.M. 41.2 °C.

8th.—Condition unchanged. Temperature A.M. 41.2 °C. Hæmatozoa absent. Temperature P.M. 40.4 °C.

9th.—A large caseous mass has escaped from the point of suppuration in the left scrotal sac, but on microscopical examination no hæmatozoa can be discovered. Temperature 39.7 °C. Hæmatozoa absent.

10th.—Condition unchanged. Temperature A.M. 40.6 °C. Hæmatozoa absent. Temperature P.M. 41.3 °C.

11th.—The wound in the scrotal sac is now commencing to granulate. Temperature A.M. 40.3 °C. Hæmatozoa absent.

12th.—Condition unchanged. Temperature A.M. 40.5 °C. Hæmatozoa absent. Temperature P.M. 41.0 °C.

13th.— " " 41.0 °C. " " 41.3 °C.

14th.— " " 40.5 °C. " " 41.0 °C.

15th.— " " 40.2 °C. " " 41.0 °C.

16th.— " " 40.1 °C. " " 40.8 °C.

17th.— " " 40.3 °C. " " 41.0 °C.

18th.— " " 40.0 °C. " " 41.3 °C.

19th.— " " 39.7 °C. " " 41.0 °C.

20th.— " " 40.2 °C. " " 40.7 °C.

21st.— " " 40.0 °C. " " 40.8 °C.

22nd.— " " 39.8 °C. " " 40.4 °C.

23rd.— " " 39.7 °C. " " 40.4 °C.

24th.— " " 40.2 °C. " " 40.8 °C.



|            |                  |          |                                  |                  |          |
|------------|------------------|----------|----------------------------------|------------------|----------|
| 25th.—     | Temperature A.M. | 40.1 °C. | Hæmatozoa absent from the blood. | Temperature P.M. | 40.2 °C. |
| 26th.—     | "                | 39.6 °C. | "                                | "                | 40.1 °C. |
| 27th.—     | "                | 39.6 °C. | "                                | "                | 40.3 °C. |
| 28th.—     | "                | 40.1 °C. | "                                | "                | 40.1 °C. |
| 29th.—     | "                | 39.2 °C. | "                                | "                | 40.3 °C. |
| 30th.—     | "                | 39.3 °C. | "                                | "                | 39.3 °C. |
| 31st.—     | "                | 39.6 °C. | "                                | "                | 40.5 °C. |
| 1st Sept.— | "                | 40.0 °C. | "                                | "                | 40.7 °C. |
| 2nd.—      | "                | 40.2 °C. | "                                | "                | 40.5 °C. |
| 3rd.—      | "                | 39.7 °C. | "                                | "                | 39.5 °C. |
| 4th.—      | Death.           |          |                                  |                  |          |

Autopsy.—All the organs present a healthy appearance.

#### GUINEA PIGS INOCULATED WITH THE BLOOD OF THE RAT.

##### GUINEA PIG No. I.

22nd November 1891, 2 P.M.—Inoculated subcutaneously in the right inguinal region with 0.5 c. c. of blood containing numerous hæmatozoa, taken from the heart of a rat (*Mus decumanus*), immediately after death.

|           |                  |          |      |          |                            |
|-----------|------------------|----------|------|----------|----------------------------|
| 23rd.—    | Temperature A.M. | 40.0 °C. | P.M. | .....    |                            |
| 24th.—    | "                | 40.1 °C. | "    | 39.7 °C. | No hæmatozoa in the blood. |
| 25th.—    | "                | 39.6 °C. | "    | 40.1 °C. | " "                        |
| 26th.—    | "                | 40.1 °C. | "    | 39.8 °C. | " "                        |
| 27th.—    | "                | 39.7 °C. | "    | 39.5 °C. | " "                        |
| 28th.—    | "                | 40.1 °C. | "    | 39.8 °C. | " "                        |
| 29th.—    | "                | 40.3 °C. | "    | 39.6 °C. | " "                        |
| 30th.—    | "                | 39.9 °C. | "    | 40.1 °C. | " "                        |
| 1st Dec.— | "                | 40.3 °C. | "    | 40.1 °C. | " "                        |
| 2nd.—     | "                | 40.0 °C. | "    | 40.0 °C. | " "                        |
| 3rd.—     | "                | 39.6 °C. | "    | 40.1 °C. | " "                        |
| 4th.—     | "                | 40.2 °C. | "    | 40.1 °C. | " "                        |
| 5th.—     | "                | 39.7 °C. | "    | 39.8 °C. | " "                        |
| 6th.—     | "                | 40.2 °C. | "    | 40.1 °C. | " "                        |
| 7th.—     | "                | 40.2 °C. | "    | 39.9 °C. | " "                        |
| 8th.—     | "                | 40.3 °C. | "    | 39.8 °C. | " "                        |
| 9th.—     | "                | 40.3 °C. | "    | 40.3 °C. | " "                        |
| 10th.—    | "                | 40.1 °C. | "    | 40.1 °C. | " " Numerous granules.     |
| 11th.—    | "                | 40.3 °C. | "    | 39.8 °C. | " "                        |
| 12th.—    | "                | 39.8 °C. | "    | 39.4 °C. | " "                        |
| 13th.—    | "                | 39.6 °C. | "    | 39.6 °C. | " "                        |
| 14th.—    | "                | 39.4 °C. | "    | 39.3 °C. | " "                        |
| 15th.—    | "                | 39.6 °C. | "    | 39.7 °C. | " "                        |
| 16th.—    | "                | 39.3 °C. | "    | 39.1 °C. | " "                        |
| 17th.—    | "                | 39.3 °C. | "    | 39.2 °C. | " "                        |
| 18th.—    | "                | 39.1 °C. | "    | 39.4 °C. | " "                        |
| 19th.—    | "                | 39.1 °C. | "    | 39.3 °C. | " "                        |
| 20th.—    | "                | 39.1 °C. | "    | 39.2 °C. | " "                        |
| 21st.—    | "                | 39.3 °C. | "    | .....    | " "                        |

This animal's blood was examined daily to March 9th, 1892, but no hæmatozoa were discovered.

##### GUINEA PIG No. II.

22nd November 1891.—2 P.M.—Inoculated subcutaneously in the right inguinal region with 0.5 c. c. of blood containing numerous hæmatozoa, taken from the heart of a rat (*Mus decumanus*).

|              |                  |          |      |          |                            |
|--------------|------------------|----------|------|----------|----------------------------|
| 23rd.—       | Temperature A.M. | 40.2 °C. | P.M. | .....    | No hæmatozoa in the blood. |
| 24th.—       | "                | 39.6 °C. | "    | 39.8 °C. | " "                        |
| 25th.—       | "                | 39.8 °C. | "    | 40.1 °C. | " "                        |
| 26th.—       | "                | 39.8 °C. | "    | 40.0 °C. | " "                        |
| 27th.—       | "                | 39.9 °C. | "    | 39.7 °C. | " "                        |
| 28th.—       | "                | 40.0 °C. | "    | 40.1 °C. | " "                        |
| 29th.—       | "                | 40.1 °C. | "    | 39.6 °C. | " "                        |
| 30th.—       | "                | 40.1 °C. | "    | 40.2 °C. | " "                        |
| 1st December | "                | 40.2 °C. | "    | 39.9 °C. | " "                        |
| 2nd.—        | "                | 39.9 °C. | "    | 40.1 °C. | " "                        |
| 3rd.—        | "                | 39.8 °C. | "    | 40.2 °C. | " "                        |
| 4th.—        | "                | 40.1 °C. | "    | 40.3 °C. | " "                        |
| 5th.—        | "                | 39.8 °C. | "    | 39.9 °C. | " "                        |
| 6th.—        | "                | 40.1 °C. | "    | 39.8 °C. | " "                        |
| 7th.—        | "                | 40.1 °C. | "    | 40.3 °C. | " "                        |
| 8th.—        | "                | 40.2 °C. | "    | 40.1 °C. | " "                        |
| 9th.—        | "                | 40.2 °C. | "    | 39.9 °C. | " "                        |
| 10th.—       | "                | 40.2 °C. | "    | 40.3 °C. | " "                        |
| 11th.—       | "                | 40.2 °C. | "    | 39.3 °C. | " "                        |
| 12th.—       | "                | 39.9 °C. | "    | 39.6 °C. | " "                        |
| 13th.—       | "                | 39.8 °C. | "    | 39.9 °C. | " "                        |
| 14th.—       | "                | 39.9 °C. | "    | 39.5 °C. | " "                        |
| 15th.—       | "                | 40.3 °C. | "    | 39.5 °C. | " "                        |
| 16th.—       | "                | 39.4 °C. | "    | 39.7 °C. | " "                        |



|        |                  |          |       |          |                                  |
|--------|------------------|----------|-------|----------|----------------------------------|
| 17th.— | Temperature A.M. | 39·8 °C. | P.M.  | 39·1 °C. | Hæmatozoa absent from the blood. |
| 18th.— | "                | 39·7 °C. | "     | 39·8 °C. | " "                              |
| 19th.— | "                | 39·3 °C. | "     | 39·6 °C. | " "                              |
| 20th.— | "                | 39·8 °C. | "     | 39·3 °C. | " "                              |
| 21st.— | "                | 40·1 °C. | ..... |          |                                  |

This animal's blood was examined daily to March 9th, 1892, but no hæmatozoa were discovered.

### GUINEA PIG No. III.

Inoculated in the right inguinal region with 0·5 e. c. of blood containing a few hæmatozoa taken from the heart of a rat (*Mus decumanus*) immediately after death.

|                       |                  |       |          |          |                                  |
|-----------------------|------------------|-------|----------|----------|----------------------------------|
| 19th September 1891.— | Temperature A.M. | ..... | P.M.     | 39·5 °C. | Hæmatozoa absent from the blood. |
| 20th.—                | "                | "     | 39·2 °C. | 39·6 °C. | " "                              |
| 21st.—                | "                | "     | 39·4 °C. | 39·6 °C. | " "                              |
| 22nd.—                | "                | "     | 39·1 °C. | 39·6 °C. | " "                              |
| 23rd.—                | "                | "     | 39·5 °C. | 39·8 °C. | " "                              |
| 24th.—                | "                | "     | 39·5 °C. | 39·6 °C. | " "                              |
| 25th.—                | "                | "     | 40·6 °C. | 40·4 °C. | " "                              |
| 26th.—                | "                | "     | 39·8 °C. | 40·1 °C. | " "                              |
| 27th.—                | "                | "     | 39·0 °C. | 39·4 °C. | " "                              |
| 28th.—                | "                | "     | 39·0 °C. | 39·4 °C. | " "                              |
| 29th.—                | "                | "     | 39·3 °C. | 39·6 °C. | " "                              |
| 30th.—                | "                | "     | 40·2 °C. | 40·0 °C. | " "                              |
| 1st October           | "                | "     | 39·4 °C. | 39·0 °C. | " "                              |
| 2nd.—                 | "                | "     | 38·7 °C. | 39·0 °C. | " "                              |
| 3rd.—                 | "                | "     | 38·8 °C. | 39·3 °C. | " "                              |
| 4th.—                 | "                | "     | 39·6 °C. | 39·7 °C. | " "                              |
| 5th.—                 | "                | "     | 39·8 °C. | 39·7 °C. | " "                              |
| 6th.—                 | "                | "     | 39·0 °C. | 39·2 °C. | " "                              |
| 7th.—                 | "                | "     | 39·0 °C. | 39·5 °C. | " "                              |
| 8th.—                 | "                | "     | 40·0 °C. | 39·8 °C. | " "                              |
| 9th.—                 | "                | "     | 40·5 °C. | 40·6 °C. | " "                              |
| 10th.—                | "                | "     | 40·4 °C. | 40·4 °C. | " "                              |
| 11th.—                | "                | "     | 39·6 °C. | 40·3 °C. | " "                              |
| 12th.—                | "                | "     | 39·6 °C. | 39·6 °C. | " "                              |
| 13th.—                | "                | "     | 39·5 °C. | 39·8 °C. | " "                              |
| 14th.—                | "                | "     | 39·6 °C. | 40·0 °C. | " "                              |
| 15th.—                | "                | "     | 39·7 °C. | 40·1 °C. | " "                              |
| 16th.—                | "                | "     | 39·4 °C. | 40·1 °C. | " "                              |
| 17th.—                | "                | "     | 40·2 °C. | 40·0 °C. | " "                              |
| 18th.—                | "                | "     | 39·2 °C. | 39·4 °C. | " "                              |
| 19th.—                | "                | "     | 39·8 °C. | 40·2 °C. | " "                              |
| 20th.—                | "                | "     | 39·7 °C. | 40·0 °C. | " "                              |
| 21st.—                | "                | "     | 39·4 °C. | 40·0 °C. | " "                              |
| 22nd.—                | "                | "     | 39·5 °C. | 40·1 °C. | " "                              |
| 23rd.—                | "                | "     | 39·4 °C. | 40·3 °C. | " "                              |
| 24th.—                | "                | "     | 40·1 °C. | 40·3 °C. | " "                              |
| 25th.—                | "                | "     | 39·5 °C. | 40·2 °C. | " "                              |
| 26th.—                | "                | "     | 39·7 °C. | 41·2 °C. | " "                              |
| 27th.—                | "                | "     | 40·1 °C. | 40·2 °C. | " "                              |
| 28th.—                | "                | "     | 39·6 °C. | 40·1 °C. | " "                              |
| 29th.—                | "                | "     | 39·8 °C. | 40·3 °C. | " "                              |

30th.—Re-inoculated subcutaneously in both inguinal regions, with 0·2 e. c. of blood containing numerous hæmatozoa taken from the heart of a rat (*Mus decumanus*) immediately after death. Temperature A.M. 39·7 °C. Hæmatozoa absent from the blood. Temperature P.M. 40·4 °C.

31st.—There are slightly enlarged glands to be felt in both inguinal regions. Temperature A.M. 39·8 °C. Hæmatozoa absent. Temperature P.M. 40·3 °C.

1st November.—The glands on both sides have increased in size since yesterday. Temperature A.M. 40·6 °C. Hæmatozoa absent. Temperature P.M. 40·2 °C.

2nd.—The gland in the right inguinal region is nearly circular and measures  $\frac{1}{5}$ th of an inch in diameter, whilst the one in the left measures  $\frac{2}{5}$ th of an inch in diameter, both are tender. Temperature A.M. 39·5 °C. Hæmatozoa absent. Temperature P.M. 40·1 °C.

3rd.—The right gland is increased in size, and measures  $\frac{1}{4}$ th of an inch in diameter, that on the left has decreased and is now  $\frac{1}{2}$  inch in diameter. There is also swelling and œdema of the integument across the posterior third of the abdomen. Temperature A.M. 39·4 °C. Hæmatozoa absent from the blood. Temperature P.M. 40·6 °C.

|        |                  |          |      |          |                                  |
|--------|------------------|----------|------|----------|----------------------------------|
| 4th.—  | Temperature A.M. | 39·8 °C. | P.M. | 40·5 °C. | Hæmatozoa absent from the blood. |
| 5th.—  | "                | 40·0 °C. | "    | 40·4 °C. | " "                              |
| 6th.—  | "                | 39·4 °C. | "    | 40·5 °C. | " "                              |
| 7th.—  | "                | 39·7 °C. | "    | 40·4 °C. | " "                              |
| 8th.—  | "                | 40·0 °C. | "    | 40·7 °C. | " "                              |
| 9th.—  | "                | 40·2 °C. | "    | 40·5 °C. | " "                              |
| 10th.— | "                | 40·0 °C. | "    | 40·6 °C. | " "                              |
| 11th.— | "                | 37·2 °C. | "    | 35·3 °C. | " "                              |

12th.—Death in the early morning.

Autopsy.—Five hours after death.

The organs present a healthy appearance.

## FOWLS.

28<sup>th</sup> January 1891, 3 P.M.—Inoculated subcutaneously two fowls (*Gallus domesticus*) each with 0·3 c. c. of blood containing numerous hæmatozoa taken from the heart of a rat (*Mus decumanus*) immediately after death.

No. I.

No. II.

| Month<br>and Date. | Condition of Blood. | Temperature. |          | Condition of Blood. | Temperature. |          |
|--------------------|---------------------|--------------|----------|---------------------|--------------|----------|
|                    |                     | A.M.         | P.M.     |                     | A.M.         | P.M.     |
| January 28 ...     | Inoculated ...      | 42·0 °C.     | 42·2 °C. | Inoculated ...      | 42·2 °C.     | 42·5 °C. |
| " 29 ...           | No hæmatozoa ...    | 42·3 °C.     | 42·8 °C. | No hæmatozoa ...    | 42·6 °C.     | 43·2 °C. |
| " 30 ...           | " ...               | 42·4 °C.     | 42·6 °C. | " ...               | 42·5 °C.     | 42·9 °C. |
| " 31 ...           | " ...               | 42·5 °C.     | 42·4 °C. | " ...               | 42·8 °C.     | 42·5 °C. |
| February 1 ...     | " ...               | 42·2 °C.     | 42·4 °C. | " ...               | 42·4 °C.     | 42·6 °C. |
| " 2 ...            | " ...               | 42·4 °C.     | 42·6 °C. | " ...               | 42·5 °C.     | 42·6 °C. |
| " 3 ...            | " ...               | 42·2 °C.     | 42·0 °C. | " ...               | 41·8 °C.     | 42·9 °C. |
| " 4 ...            | " ...               | 42·4 °C.     | 42·8 °C. | " ...               | 42·7 °C.     | 43·1 °C. |
| " 5 ...            | " ...               | 42·4 °C.     | 42·6 °C. | " ...               | 42·6 °C.     | 42·9 °C. |
| " 6 ...            | " ...               | 42·4 °C.     | 42·4 °C. | " ...               | 42·2 °C.     | 42·2 °C. |
| " 7 ...            | " ...               | 42·9 °C.     | 42·8 °C. | " ...               | 42·1 °C.     | 42·3 °C. |
| " 8 ...            | " ...               | 42·6 °C.     | 42·8 °C. | " ...               | 42·3 °C.     | 42·5 °C. |
| " 9 ...            | " ...               | 42·5 °C.     | 42·7 °C. | " ...               | 42·5 °C.     | 42·8 °C. |
| " 10 ...           | " ...               | 42·3 °C.     | 42·5 °C. | " ...               | 42·1 °C.     | 42·3 °C. |
| " 11 ...           | " ...               | 42·4 °C.     | 42·7 °C. | " ...               | 42·4 °C.     | 42·5 °C. |
| " 12 ...           | " ...               | 42·5 °C.     | 42·6 °C. | " ...               | 42·4 °C.     | 42·7 °C. |
| " 13 ...           | " ...               | 42·3 °C.     | 42·6 °C. | " ...               | 42·1 °C.     | 42·4 °C. |
| " 14 ...           | " ...               | 42·3 °C.     | 42·5 °C. | " ...               | 42·4 °C.     | 42·7 °C. |
| " 15 ...           | " ...               | 42·1 °C.     | 42·3 °C. | " ...               | 42·2 °C.     | 42·5 °C. |
| " 16 ...           | " ...               | 42·1 °C.     | 42·3 °C. | " ...               | 42·2 °C.     | 42·4 °C. |
| " 17 ...           | " ...               | 42·2 °C.     | 42·4 °C. | " ...               | 42·3 °C.     | 42·6 °C. |
| " 18 ...           | " ...               | 42·2 °C.     | 42·4 °C. | " ...               | 42·5 °C.     | 42·5 °C. |
| " 19 ...           | " ...               | 42·0 °C.     | 42·2 °C. | " ...               | 42·4 °C.     | 42·5 °C. |
| " 20 ...           | " ...               | 42·3 °C.     | 42·5 °C. | " ...               | 42·5 °C.     | 42·4 °C. |
| " 21 ...           | " ...               | 42·2 °C.     | 42·4 °C. | " ...               | 42·1 °C.     | 42·3 °C. |
| " 22 ...           | " ...               | 42·4 °C.     | 42·7 °C. | " ...               | 42·2 °C.     | 42·4 °C. |
| " 23 ...           | " ...               | 42·5 °C.     | 42·7 °C. | " ...               | 42·4 °C.     | 42·5 °C. |
| " 24 ...           | " ...               | 42·3 °C.     | 42·5 °C. | " ...               | 42·8 °C.     | 42·4 °C. |

As no hæmatozoa had appeared up to the 24th February 1891, the microscopical examination of the blood was discontinued.

12<sup>th</sup> June.—Re-inoculated subcutaneously in the right inguinal regions with 1·0 c. c. of blood each taken from the jugular vein of Horse No. XIII, immediately after death; the blood of the horse previous to death contained swarms of hæmatozoa.

No. I.

No. II.

| Month<br>and Date. | Condition of the Blood. | Temperature. |          | Condition of Blood. | Temperature. |          |
|--------------------|-------------------------|--------------|----------|---------------------|--------------|----------|
|                    |                         | A.M.         | P.M.     |                     | A.M.         | P.M.     |
| June 12 ...        | No hæmatozoa ...        | ...          | 42·9 °C. | No Hæmatozoa ...    | ...          | 42·3 °C. |
| " 13 ...           | " ...                   | 42·7 °C.     | 42·8 °C. | " ...               | 41·9 °C.     | 42·6 °C. |
| " 14 ...           | " ...                   | 42·5 °C.     | 42·8 °C. | " ...               | 42·4 °C.     | 42·8 °C. |
| " 15 ...           | " ...                   | 42·5 °C.     | 42·6 °C. | " ...               | 42·6 °C.     | 42·5 °C. |
| " 16 ...           | " ...                   | 42·3 °C.     | 42·9 °C. | " ...               | 42·3 °C.     | 42·8 °C. |
| " 17 ...           | " ...                   | 42·6 °C.     | 43·4 °C. | " ...               | 42·5 °C.     | 42·7 °C. |
| " 18 ...           | " ...                   | 43·1 °C.     | 43·3 °C. | " ...               | 42·9 °C.     | 42·9 °C. |
| " 19 ...           | " ...                   | 42·9 °C.     | 42·9 °C. | " ...               | 42·6 °C.     | 43·2 °C. |
| " 20 ...           | " ...                   | 42·8 °C.     | 42·8 °C. | " ...               | 42·6 °C.     | 42·8 °C. |
| " 21 ...           | " ...                   | 42·6 °C.     | 42·2 °C. | " ...               | 41·6 °C.     | 41·2 °C. |
| " 22 ...           | " ...                   | 41·6 °C.     | 42·6 °C. | " ...               | 41·6 °C.     | 41·7 °C. |
| " 23 ...           | " ...                   | 42·3 °C.     | 42·5 °C. | " ...               | 42·0 °C.     | 42·2 °C. |
| " 24 ...           | " ...                   | 42·3 °C.     | 42·3 °C. | " ...               | 42·1 °C.     | 42·4 °C. |
| " 25 ...           | " ...                   | 41·8 °C.     | 42·4 °C. | " ...               | 42·2 °C.     | 42·0 °C. |
| " 26 ...           | " ...                   | 42·3 °C.     | 42·3 °C. | " ...               | 41·7 °C.     | 42·1 °C. |
| " 27 ...           | " ...                   | 42·3 °C.     | 42·3 °C. | " ...               | 41·6 °C.     | 42·1 °C. |
| " 28 ...           | " ...                   | 42·3 °C.     | 42·2 °C. | " ...               | 42·2 °C.     | 42·2 °C. |
| " 29 ...           | " ...                   | 42·5 °C.     | 42·2 °C. | " ...               | 41·7 °C.     | 42·2 °C. |
| " 30 ...           | " ...                   | 42·1 °C.     | 42·3 °C. | " ...               | 42·1 °C.     | 42·0 °C. |
| July 1 ...         | " ...                   | 42·3 °C.     | 42·4 °C. | " ...               | 42·0 °C.     | 42·2 °C. |
| " 2 ...            | " ...                   | 42·3 °C.     | 42·4 °C. | " ...               | 42·1 °C.     | 42·4 °C. |
| " 3 ...            | " ...                   | 42·3 °C.     | 42·4 °C. | " ...               | 42·2 °C.     | 42·4 °C. |
| " 4 ...            | " ...                   | 42·2 °C.     | 42·4 °C. | " ...               | 42·0 °C.     | 42·1 °C. |
| " 5 ...            | " ...                   | 42·4 °C.     | 42·3 °C. | " ...               | 42·0 °C.     | 42·4 °C. |
| " 6 ...            | " ...                   | 42·1 °C.     | 42·2 °C. | " ...               | 42·2 °C.     | 42·1 °C. |
| " 7 ...            | " ...                   | 42·3 °C.     | 42·3 °C. | " ...               | 42·0 °C.     | 42·0 °C. |
| " 8 ...            | " ...                   | 42·1 °C.     | 42·2 °C. | " ...               | 41·5 °C.     | 41·7 °C. |
| " 9 ...            | " ...                   | 42·0 °C.     | ...      | " ...               | 42·1 °C.     | ...      |

Microscopical examination of blood, &c., discontinued from this date.

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B.

RAT SURRA

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APPENDIX VI.

SUBCUTANEOUS INOCULATION WITH THE BLOOD OF DIFFERENT ANIMALS, WHICH HAD  
BEEN PREVIOUSLY INOCULATED FROM THE RAT.

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(A).—RESULTS POSITIVE.

BULL No. III, DONKEY No. II, COW No. I, (GUINEA PIG No. I), CAT No. I, DOG  
No. I, HORSE No. LXIX, RABBIT No. II.

(B).—RESULTS NEGATIVE.

BULL No. I, RABBIT No. 1.

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Inoculated with rat's blood previously passed through Horses Nos. LXII and LXVII. Appearance of the hæmatozoon on the 4th day. Three paroxysms of 7, 2, and 1 days, with two intermissions of 13 and 9 days respectively. Re-inoculation with Horse-Surra blood after absence of hæmatozoon for 159 days. Period of incubation 49 days. Three paroxysms of 1, 3 and 3 days with two intermissions of 109 and 9 days respectively. Death (from rinderpest) occurred 58 days after the last paroxysm.

| Date. |       | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Urine.  |         |           |          |                |
|-------|-------|-----------------|--------|--------|--------|------|--------------|------|---------------------|---------|---------|-----------|----------|----------------|
|       |       | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | Colour. | Sp. Gr. | Reaction. | Albumen. | Hippuric Acid. |
| 1892. |       |                 |        |        |        |      |              |      |                     |         |         |           |          |                |
| July  | 24... | ...             | ...    | 39·6   | ...    | ...  | ...          | ...  | Healthy.            | ...     | ...     | ...       | ...      | ...            |
| "     | 25... | 39·1            | 39·3   | 39·6   | ...    | ...  | ...          | ...  | "                   | ...     | ...     | ...       | ...      | ...            |
| "     | 26... | 39·3            | 39·5   | 39·6   | ...    | ...  | ...          | ...  | "                   | ...     | ...     | ...       | ...      | ...            |
| "     | 27... | 39·1            | 39·3   | 39·4   | ...    | ...  | ...          | ...  | "                   | ...     | ...     | ...       | ...      | ...            |
| "     | 28... | 39·0            | 39·1   | 39·3   | ...    | ...  | ...          | ...  | "                   | ...     | ...     | ...       | ...      | ...            |
| "     | 29... | 38·3            | 38·9   | 39·5   | ...    | ...  | ...          | ...  | "                   | ...     | ...     | ...       | ...      | ...            |
| "     | 30... | 38·5            | 39·0   | 39·8   | ...    | ...  | ...          | ...  | "                   | ...     | ...     | ...       | ...      | ...            |
| "     | 31... | 37·6            | 38·6   | 39·7   | ...    | ...  | ...          | ...  | "                   | ...     | ...     | ...       | ...      | ...            |

|        |      |      |      |      |     |     |     |     |         |        |       |           |      |      |
|--------|------|------|------|------|-----|-----|-----|-----|---------|--------|-------|-----------|------|------|
| August | 1... | 38.5 | 38.6 | 38.8 | ... | ... | ... | ... | Absent. | Clear. | 1,026 | Alkaline. | Nil. | Nil. |
| "      | 2... | 39.2 | 39.8 | 40.3 | ... | ... | ... | ... | "       | "      | 1,030 | "         | "    | "    |
| "      | 3... | 39.5 | 40.5 | 40.4 | 60  | 68  | 16  | 16  | Few.    | "      | 1,038 | "         | "    | "    |
| "      | 4... | 39.3 | 40.2 | 40.5 | 56  | 64  | 11  | 15  | "       | "      | 1,046 | "         | "    | "    |
| "      | 5... | 39.3 | 40.2 | 40.7 | 56  | 56  | 14  | 18  | "       | "      | 1,052 | "         | "    | "    |

|      |      |      |      |    |    |    |    |           |        |       |                    |      |   |
|------|------|------|------|----|----|----|----|-----------|--------|-------|--------------------|------|---|
| 6... | 41.3 | 41.4 | 41.3 | 66 | 52 | 14 | 16 | Swarming. | Clear. | 1,036 | Strongly alkaline. | Nil. | " |
|------|------|------|------|----|----|----|----|-----------|--------|-------|--------------------|------|---|

|      |      |      |      |    |    |    |    |           |        |       |                       |      |      |
|------|------|------|------|----|----|----|----|-----------|--------|-------|-----------------------|------|------|
| 7... | 40·3 | 40·7 | 40·2 | 60 | 60 | 16 | 24 | Swarming. | Clear. | 1,050 | Strongly<br>alkaline. | Nil. | Nil. |
|------|------|------|------|----|----|----|----|-----------|--------|-------|-----------------------|------|------|

|   |      |      |      |      |    |    |    |    |           |        |       |                       |      |   |
|---|------|------|------|------|----|----|----|----|-----------|--------|-------|-----------------------|------|---|
| „ | 8... | 39·3 | 40·6 | 40·8 | 60 | 64 | 10 | 20 | Swarming. | Clear. | 1,043 | Strongly<br>alkaline. | Nil. | „ |
|---|------|------|------|------|----|----|----|----|-----------|--------|-------|-----------------------|------|---|

|      |      |      |      |    |    |    |    |           |        |       |                    |      |   |
|------|------|------|------|----|----|----|----|-----------|--------|-------|--------------------|------|---|
| 9... | 39·4 | 40·4 | 40·4 | 69 | 76 | 10 | 20 | Swarming. | Clear. | 1,042 | Strongly alkaline. | Nil. | „ |
|------|------|------|------|----|----|----|----|-----------|--------|-------|--------------------|------|---|

|       |      |      |      |    |    |    |    |         |        |       |           |      |
|-------|------|------|------|----|----|----|----|---------|--------|-------|-----------|------|
| 10... | 38.8 | 39.3 | 40.1 | 64 | 64 | 10 | 18 | Absent. | Clear. | 1,038 | Alkaline. | Nil. |
|-------|------|------|------|----|----|----|----|---------|--------|-------|-----------|------|

|       |      |      |      |    |    |    |    |         |        |       |           |      |
|-------|------|------|------|----|----|----|----|---------|--------|-------|-----------|------|
| 11... | 38.8 | 39.0 | 39.3 | 56 | 56 | 12 | 16 | Absent. | Clear. | 1,038 | Alkaline. | Nil. |
|-------|------|------|------|----|----|----|----|---------|--------|-------|-----------|------|

12...| 39.3| 39.3| 39.3| 60 | 64 | 24 | 24 | Absent. | Clear. | 1,040 | Alkaline. | Nil. | Nil.

„ 13...|39.2|39.2|39.5| 48 | 56 | 20 | 24 | „ | „ | 1,038 | „ | „ | „

„ 14... | 39.3 | 39.3 | 39.6 | 72 | 64 | 14 | 18 | „ | „ | 1,030 | „ | „ | „

|       |      |      |      |    |    |    |    |   |   |       |          |   |   |
|-------|------|------|------|----|----|----|----|---|---|-------|----------|---|---|
| 15... | 39.2 | 39.3 | 39.3 | 58 | 68 | 14 | 28 | „ | „ | 1,038 | Strongly | „ | „ |
|-------|------|------|------|----|----|----|----|---|---|-------|----------|---|---|

|       |      |      |      |    |    |    |    |       |  |  |
|-------|------|------|------|----|----|----|----|-------|--|--|
| 16... | 39.1 | 39.3 | 39.7 | 60 | 68 | 14 | 14 | 1,030 |  |  |
| 17... | 39.2 | 39.4 | 40.0 | 62 | 70 | 14 | 14 | 1,036 |  |  |

„ 18...|39.3|39.3|40.0| 68 | 62 | 14 | 14 | Absent. | Clear. | 1,042 | Alkaline. | „ | „

|       |      |      |      |    |    |    |    |         |        |       |           |   |   |
|-------|------|------|------|----|----|----|----|---------|--------|-------|-----------|---|---|
| 19... | 39.2 | 40.0 | 40.1 | 64 | 64 | 16 | 16 | Absent. | Clear. | 1,016 | Alkaline. | „ | „ |
|-------|------|------|------|----|----|----|----|---------|--------|-------|-----------|---|---|

|    |       |      |      |      |    |    |    |    |        |   |       |   |   |   |
|----|-------|------|------|------|----|----|----|----|--------|---|-------|---|---|---|
| 31 | 20... | 39.3 | 39.3 | 39.6 | 64 | 60 | 16 | 16 | „      | „ | 1,040 | „ | „ | „ |
|    | 21    | 28.0 | 20.0 | 20.5 | 48 | 60 | 18 | 18 | Turbid |   | 1,024 |   |   |   |

|       |      |      |      |    |    |    |    |   |        |       |   |   |
|-------|------|------|------|----|----|----|----|---|--------|-------|---|---|
| 21... | 38.9 | 39.0 | 39.9 | 48 | 60 | 18 | 18 | „ | Parba. | 1,324 | „ | „ |
| 22... | 39.1 | 39.6 | 40.2 | 56 | 60 | 15 | 18 | „ | Clear. | 1,028 | „ | „ |

|       |      |      |      |    |    |    |    |      |   |       |   |   |   |
|-------|------|------|------|----|----|----|----|------|---|-------|---|---|---|
| 23... | 39.3 | 40.0 | 40.2 | 48 | 66 | 13 | 20 | Few. | " | 1,030 | " | " | " |
|-------|------|------|------|----|----|----|----|------|---|-------|---|---|---|

The animal is dull, muzzle dry, and hard pulse, but rumination is regular and excretions normal.

The animal is dull, muzzle dry, and hard pulse, but rumination is regular and excretions normal.

| Date.  | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Urine.  |         |                    |                |                                 |
|--|-----------------|--------|--------|--------|------|--------------|------|---------------------|---------|---------|--------------------|----------------|---------------------------------|
|  | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | Colour. | Sp. Gr. | Reaction.          | Albumen.       | Hippuric Acid.                  |
| 1892.  |                 |        |        |        |      |              |      |                     |         |         |                    |                |                                 |
| Aug. 24...   | 39.0            | 39.7   | 40.0   | 64     | 64   | 14           | 20   | Few.                | Clear.  | 1,022   | Alkaline.          | Nil.           | Nil.                            |
| The muzzle is moist, horns and skin cool, but micturition is more frequent.  |                 |        |        |        |      |              |      |                     |         |         |                    |                |                                 |
| " 25...  | 39.3            | 40.0   | 40.3   | 66     | 68   | 18           | 16   | Absent.             | Clear.  | 1,024   | Strongly alkaline. | "              | "                               |
| The animal continues to pass an increased quantity of urine, and there is slight constipation.   |                 |        |        |        |      |              |      |                     |         |         |                    |                |                                 |
| " 26...  | 39.3            | 39.3   | 39.4   | 64     | 68   | 20           | 16   | Absent.             | Clear.  | 1,042   | Alkaline.          | "              | "                               |
| " 27...  | 39.1            | 39.6   | 40.0   | 56     | 64   | 16           | 20   | "                   | "       | 1,035   | "                  | "              | "                               |
| " 28...  | 39.3            | 39.3   | 39.6   | 60     | 72   | 20           | 12   | "                   | "       | 1,036   | "                  | "              | "                               |
| " 29...  | 39.3            | 40.2   | 40.0   | 60     | 64   | 15           | 20   | "                   | "       | 1,038   | "                  | "              | "                               |
| " 30...  | 39.3            | 39.7   | 40.0   | 60     | 68   | 16           | 16   | "                   | "       | 1,028   | "                  | "              | "                               |
| Polyuria continues, especially during the night.   |                 |        |        |        |      |              |      |                     |         |         |                    |                |                                 |
| " 31...  | 39.3            | 39.3   | 39.6   | 62     | 70   | 15           | 12   | Absent.             | Clear.  | 1,030   | Alkaline.          | "              | "                               |
| Sept. 1...   | 38.6            | 39.3   | 39.3   | 64     | 66   | 10           | 12   | "                   | "       | 1,030   | "                  | "              | "                               |
| " 2...   | 38.6            | 39.0   | 39.3   | 56     | 56   | 20           | 16   | "                   | "       | 1,036   | "                  | "              | "                               |
| " 3...   | 38.5            | 39.3   | 39.3   | 56     | 64   | 12           | 12   | Few.                | "       | 1,024   | "                  | "              | "                               |
| Animal somewhat dull, and coat stares, visible mucous membranes are slightly injected.   |                 |        |        |        |      |              |      |                     |         |         |                    |                |                                 |
| " 4...   | 37.6            | 39.1   | 39.3   | 56     | 64   | 16           | 16   | Absent.             | Clear.  | 1,038   | Alkaline.          | "              | "                               |
| " 5...   | 39.1            | 39.3   | 39.3   | 64     | 60   | 12           | 12   | "                   | "       | 1,032   | "                  | "              | "                               |
| " 6...   | 38.6            | 39.2   | 39.3   | 54     | 60   | 8            | 13   | "                   | "       | 1,032   | "                  | "              | "                               |
| " 7...   | 38.7            | 39.3   | 40.2   | 56     | 56   | 12           | 16   | "                   | "       | 1,024   | "                  | "              | "                               |
| The animal is dull, coat staring, muzzle dry, head and ears hanging, presents a general unthrifty appearance and is losing flesh, especially about the hind quarters, nevertheless the appetite is good, and rumination regular. |                 |        |        |        |      |              |      |                     |         |         |                    |                |                                 |
| " 8...   | 39.2            | 41.0   | 40.4   | 68     | 76   | 16           | 16   | Absent.             | Clear.  | 1,032   | Alkaline.          | "              | "                               |
| Condition as yesterday.  |                 |        |        |        |      |              |      |                     |         |         |                    |                |                                 |
| " 9...   | 39.7            | 40.2   | 40.6   | 64     | 72   | 16           | 24   | Absent.             | Clear.  | 1,024   | Alkaline.          | "              | "                               |
| Animal looks brighter, but condition otherwise the same.   |                 |        |        |        |      |              |      |                     |         |         |                    |                |                                 |
| " 10...  | 38.7            | 40.0   | 40.0   | 60     | 64   | 12           | 20   | Absent.             | Clear.  | 1,026   | Alkaline.          | "              | "                               |
| " 11...  | 38.5            | 39.2   | 39.1   | 76     | 63   | 18           | 16   | "                   | "       | 1,024   | Strongly alkaline. | "              | "                               |
| " 12...  | 38.0            | 39.3   | 40.0   | 75     | 70   | 14           | 12   | "                   | "       | 1,046   | Alkaline.          | Trace.         | "                               |
| " 13...  | 39.2            | 40.2   | 40.0   | 64     | 80   | 12           | 16   | "                   | "       | 1,048   | Strongly alkaline. | Nil.           | "                               |
| " 14...  | 39.2            | 39.6   | 39.7   | 72     | 64   | 16           | 20   | "                   | "       | 1,038   | Alkaline.          | Trace.         | "                               |
| " 15...  | 39.3            | 40.2   | 40.8   | 64     | 64   | 16           | 20   | "                   | "       | 1,028   | "                  | Nil.           | "                               |
| " 16...  | 39.1            | 40.2   | 40.3   | 60     | 64   | 16           | 16   | "                   | "       | 1,038   | "                  | "              | "                               |
| " 17...  | 39.2            | 39.3   | 40.1   | 64     | 60   | 16           | 12   | "                   | "       | 1,024   | "                  | Trace.         | Nil.                            |
| " 18...  | 39.2            | 39.3   | 40.1   | 64     | 68   | 16           | 20   | "                   | "       | 1,024   | "                  | Nil.           | "                               |
| " 19...  | 39.3            | 39.3   | 40.3   | 60     | 76   | 16           | 16   | "                   | "       | 1,026   | Strongly alkaline. | Trace.         | "                               |
| " 20...  | 38.7            | 40.5   | 40.2   | 64     | 60   | 20           | 16   | "                   | "       | 1,043   | Alkaline.          | Nil.           | "                               |
| " 21...  | 39.3            | 40.6   | 40.4   | 64     | 64   | 16           | 24   | "                   | "       | 1,022   | Strongly alkaline. | "              | "                               |
| Two guinea pigs, inoculated subcutaneously with 0.3 c.c. of blood taken from a vein in the ear, contracted the disease after a latent period of 14 days.   |                 |        |        |        |      |              |      |                     |         |         |                    |                |                                 |
| " 22...  | 39.0            | 40.0   | 40.1   | 52     | 64   | 16           | 16   | Absent.             | Clear.  | 1,022   | Strongly alkaline. | Nil.           | Heavy precipitate of phosphate. |
| " 23...  | 39.3            | 39.3   | 40.3   | 64     | 72   | 16           | 20   | "                   | "       | 1,044   | "                  | "              | "                               |
| " 24...  | 39.2            | 40.1   | 40.0   | 64     | 68   | 20           | 20   | "                   | "       | 1,034   | "                  | "              | "                               |
| " 25...  | 39.0            | 39.3   | 39.3   | 64     | 68   | 16           | 16   | "                   | "       | 1,026   | "                  | "              | "                               |
| " 26...  | 38.8            | 39.3   | 40.1   | 64     | 52   | 16           | 20   | "                   | "       | 1,032   | "                  | "              | "                               |
| " 27...  | 39.2            | 39.7   | 39.8   | 60     | 56   | 20           | 16   | "                   | "       | 1,025   | "                  | "              | "                               |
| " 28...  | 38.0            | 40.0   | 39.8   | 64     | 64   | 16           | 28   | "                   | "       | 1,030   | "                  | "              | "                               |
| " 29...  | 38.3            | 39.3   | 37.3   | 52     | 56   | 12           | 16   | "                   | "       | 1,026   | "                  | "              | "                               |
| " 30...  | 39.1            | 39.3   | 40.1   | 60     | 76   | 16           | 16   | "                   | "       | 1,037   | Alkaline.          | "              | "                               |
| Oct. 1...  | 39.1            | 39.3   | 39.3   | 64     | 68   | 16           | 16   | "                   | "       | 1,024   | "                  | Trace.         | "                               |
| " 2...   | 39.3            | 39.3   | 39.3   | 64     | 60   | 12           | 12   | "                   | "       | 1,013   | "                  | Nil.           | "                               |
| " 3...   | 38.0            | 39.2   | 39.7   | 52     | 60   | 12           | 16   | "                   | "       | 1,010   | "                  | "              | "                               |
| " 4...   | 38.0            | 40.0   | 40.4   | 52     | 64   | 12           | 16   | "                   | "       | 1,019   | "                  | "              | "                               |
| " 5...   | 38.0            | 39.0   | 40.0   | 56     | 64   | 16           | 20   | "                   | "       | 1,036   | "                  | Trace.         | "                               |
| " 6...   | 38.8            | 39.1   | 40.3   | 56     | 64   | 16           | 24   | "                   | "       | 1,040   | "                  | "              | "                               |
| " 7...   | 38.8            | 38.8   | 40.2   | 64     | 64   | 16           | 16   | "                   | "       | 1,028   | "                  | "              | "                               |
| " 8...   | 38.5            | 38.4   | 39.1   | 48     | 64   | 16           | 12   | "                   | "       | 1,026   | Strongly alkaline. | "              | "                               |
| " 9  | 38.0            | 39.8   | 40.1   | 56     | 60   | 20           | 24   | "                   | "       | 1,029   | Alkaline.          | $\frac{1}{27}$ | "                               |



| Date. |       | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Urine.  |         |                    |          |                |
|-------|-------|-----------------|--------|--------|--------|------|--------------|------|---------------------|---------|---------|--------------------|----------|----------------|
|       |       | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | Colour. | Sp. Gr. | Reaction.          | Albumen. | Hippuric Acid. |
| 1892. |       |                 |        |        |        |      |              |      |                     |         |         |                    |          |                |
| Oct.  | 10... | 38.3            | 39.0   | 39.3   | 64     | 60   | 20           | 16   | Absent.             | Clear.  | 1,027   | Alkaline.          | Nil.     | Nil.           |
| "     | 11.   | 39.2            | 38.4   | 39.1   | 60     | 64   | 12           | 16   | "                   | "       | 1,031   | Strongly alkaline. | "        | "              |
| "     | 12..  | 38.2            | 38.8   | 39.3   | 52     | 64   | 16           | 16   | "                   | "       | 1,048   | Alkaline.          | 1/30     | "              |
| "     | 13..  | 38.7            | 38.5   | 38.8   | 68     | 54   | 18           | 12   | "                   | "       | 1,034   | "                  | Nil.     | "              |
| "     | 14... | 38.3            | 39.0   | 38.8   | 56     | 56   | 16           | 16   | "                   | "       | 1,033   | "                  | Trace.   | "              |
| "     | 15... | 38.0            | 39.0   | 40.0   | 60     | 68   | 16           | 16   | "                   | "       | 1,026   | "                  | 1/30     | "              |
| "     | 16... | 38.8            | 39.3   | 39.4   | 64     | 64   | 20           | 16   | "                   | "       | 1,030   | "                  | 1/29     | "              |
| "     | 17... | 38.6            | 39.7   | 39.4   | 64     | 64   | 16           | 20   | "                   | "       | 1,040   | "                  | Nil.     | "              |
| "     | 18... | 38.6            | 38.7   | 39.4   | 64     | 64   | 16           | 20   | "                   | "       | 1,034   | "                  | "        | "              |
| "     | 19... | 38.6            | 38.6   | 39.2   | 60     | 64   | 16           | 20   | "                   | "       | 1,012   | "                  | "        | "              |
| "     | 20... | 38.4            | 38.7   | 39.0   | 64     | 64   | 16           | 16   | "                   | Turbid. | 1,026   | "                  | Trace.   | "              |
| "     | 21... | 38.6            | 38.6   | 39.3   | 44     | 64   | 24           | 24   | "                   | Clear.  | 1,032   | "                  | "        | "              |
| "     | 22... | 38.3            | 38.8   | 39.3   | 64     | 64   | 16           | 20   | "                   | "       | 1,034   | "                  | 1/45     | "              |
| "     | 23... | 38.8            | 39.2   | 39.1   | 64     | 72   | 12           | 16   | "                   | "       | 1,034   | "                  | Trace.   | "              |
| "     | 24... | 38.1            | 38.4   | 39.0   | 64     | 64   | 16           | 20   | "                   | "       | 1,028   | "                  | "        | "              |
| "     | 25... | 39.0            | 39.6   | 39.2   | 64     | 64   | 20           | 24   | "                   | "       | 1,027   | "                  | "        | "              |
| "     | 26... | 38.8            | 38.4   | 38.6   | 68     | 72   | 24           | 16   | "                   | "       | 1,026   | "                  | Nil.     | "              |
| "     | 27... | 39.0            | 39.3   | 39.5   | 64     | 72   | 20           | 20   | "                   | Turbid. | 1,042   | "                  | Trace.   | "              |
| "     | 28... | 39.0            | 39.4   | 40.0   | 64     | 72   | 20           | 20   | "                   | Clear.  | 1,028   | "                  | "        | "              |
| "     | 29... | 39.2            | 39.7   | 39.8   | 64     | 64   | 16           | 20   | "                   | "       | 1,022   | "                  | Nil.     | "              |
| "     | 30... | 39.5            | 39.6   | 39.7   | 64     | 64   | 20           | 24   | "                   | Turbid. | 1,040   | "                  | Trace.   | "              |
| "     | 31... | 38.6            | 40.0   | 39.0   | 60     | 64   | 16           | 16   | "                   | "       | 1,032   | "                  | "        | "              |
| Nov.  | 1...  | 38.5            | 38.8   | 39.1   | 64     | 64   | 20           | 16   | "                   | "       | 1,027   | "                  | "        | "              |
| "     | 2...  | 38.4            | 39.1   | 39.2   | 60     | 64   | 20           | 16   | "                   | Clear.  | 1,022   | "                  | Nil.     | "              |
| "     | 3...  | 39.1            | 39.0   | 39.5   | 64     | 64   | 16           | 20   | "                   | Turbid. | 1,028   | "                  | 1/22     | "              |
| "     | 4...  | 39.1            | 39.1   | 39.5   | 64     | 60   | 20           | 16   | "                   | Clear.  | 1,034   | "                  | Trace.   | Trace.         |
| "     | 5...  | 38.4            | 38.7   | 39.3   | 60     | 64   | 12           | 20   | "                   | "       | 1,020   | "                  | 1/28     | Nil.           |
| "     | 6...  | 38.5            | 38.6   | 39.2   | 64     | 64   | 16           | 16   | "                   | "       | 1,034   | "                  | 1/30     | "              |
| "     | 7...  | 38.7            | 38.7   | 39.3   | 64     | 64   | 16           | 20   | "                   | "       | 1,024   | "                  | Trace.   | "              |
| "     | 8...  | 38.5            | 39.0   | 39.2   | 60     | 64   | 16           | 20   | "                   | "       | 1,032   | "                  | "        | "              |
| "     | 9...  | 38.1            | 39.0   | 39.3   | 60     | 64   | 16           | 20   | "                   | "       | 1,028   | "                  | 1/45     | "              |
| "     | 10... | 38.3            | 38.8   | 39.2   | 64     | 64   | 12           | 20   | "                   | "       | 1,026   | "                  | 1/40     | "              |
| "     | 11... | 37.6            | 38.7   | 39.5   | 56     | 64   | 12           | 12   | "                   | "       | 1,022   | "                  | 1/52     | "              |
| "     | 12... | 38.2            | 37.8   | 38.8   | 64     | 64   | 12           | 20   | "                   | "       | 1,028   | "                  | Nil.     | "              |
| "     | 13... | 38.4            | 38.3   | 38.7   | 64     | 64   | 12           | 16   | "                   | Turbid. | 1,020   | "                  | 1/36     | "              |
| "     | 14... | 37.2            | 38.5   | 40.5   | 52     | 64   | 12           | 16   | "                   | "       | 1,046   | "                  | 1/32     | "              |
| "     | 15... | 38.1            | 38.5   | 39.3   | 64     | 68   | 16           | 16   | "                   | Clear.  | 1,042   | "                  | Nil.     | "              |
| "     | 16... | 38.3            | 38.7   | 39.3   | 64     | 72   | 12           | 16   | "                   | "       | 1,018   | "                  | 1/35     | "              |
| "     | 17... | 38.0            | 38.3   | 40.1   | 64     | 64   | 12           | 20   | "                   | Turbid. | 1,038   | "                  | 1/50     | 1/14           |
| "     | 18... | 38.0            | 38.3   | 40.6   | 56     | 64   | 16           | 16   | "                   | Clear.  | 1,030   | "                  | 1/35     | Nil.           |
| "     | 19... | 38.3            | 38.8   | 39.8   | 64     | 64   | 12           | 16   | "                   | Turbid. | 1,032   | "                  | 1/32     | "              |
| "     | 20... | 38.2            | 38.7   | 39.8   | 64     | 64   | 12           | 20   | "                   | "       | 1,044   | "                  | 1/21     | "              |
| "     | 21... | 37.6            | 38.4   | 40.0   | 64     | 68   | 12           | 12   | "                   | Clear.  | 1,028   | "                  | 1/19     | 1/12           |
| "     | 22... | 38.6            | 38.7   | 40.6   | 64     | 64   | 16           | 16   | "                   | "       | 1,037   | "                  | 1/20     | Nil.           |
| "     | 23... | 38.4            | 38.4   | 40.6   | 64     | 68   | 16           | 20   | "                   | "       | 1,026   | "                  | 1/50     | "              |
| "     | 24... | 38.3            | 39.0   | 40.7   | 64     | 64   | 12           | 28   | "                   | "       | 1,030   | "                  | 1/48     | "              |
| "     | 25... | 38.3            | 38.2   | 40.2   | 64     | 64   | 16           | 24   | "                   | "       | 1,026   | "                  | Trace.   | Trace.         |
| "     | 26... | 38.2            | 38.4   | 39.5   | 64     | 64   | 16           | 16   | "                   | "       | 1,020   | "                  | "        | Nil.           |
| "     | 27... | 37.8            | 38.0   | 39.8   | 64     | 64   | 16           | 20   | "                   | "       | 1,026   | "                  | "        | "              |
| "     | 28... | 38.2            | 38.4   | 39.8   | 64     | 68   | 16           | 16   | "                   | "       | 1,039   | "                  | 1/35     | "              |
| "     | 29... | 37.8            | 38.1   | 39.8   | 64     | 64   | 16           | 20   | "                   | Turbid. | 1,038   | "                  | 1/27     | "              |
| "     | 30... | 37.2            | 37.3   | 38.4   | 52     | 64   | 16           | 16   | "                   | "       | 1,044   | "                  | 1/52     | "              |
| Dec.  | 1...  | 37.1            | 38.0   | 39.7   | 64     | 64   | 20           | 20   | "                   | Clear.  | 1,010   | "                  | 1/38     | Trace.         |
| "     | 2...  | 37.2            | 38.0   | 38.5   | 64     | 68   | 16           | 20   | "                   | "       | 1,042   | "                  | 1/35     | "              |
| "     | 3...  | 37.4            | 38.1   | 38.6   | 56     | 64   | 12           | 16   | "                   | "       | 1,042   | "                  | 1/50     | "              |
| "     | 4...  | 37.5            | 38.3   | 40.2   | 56     | 64   | 16           | 16   | "                   | Turbid. | 1,038   | "                  | 1/45     | "              |
| "     | 5...  | 38.6            | 37.7   | 39.6   | 48     | 64   | 16           | 20   | "                   | Clear.  | 1,034   | "                  | 1/45     | Nil.           |
| "     | 6...  | 37.6            | 38.1   | 39.1   | 64     | 64   | 16           | 16   | "                   | "       | 1,030   | "                  | Trace.   | "              |
| "     | 7...  | 37.4            | 38.6   | 39.2   | 64     | 64   | 12           | 16   | "                   | "       | 1,030   | "                  | Nil.     | "              |
| "     | 8...  | 37.0            | 38.0   | 39.4   | 60     | 60   | 12           | 16   | "                   | Turbid. | 1,042   | "                  | 1/40     | "              |
| "     | 9...  | 37.7            | 38.1   | 39.2   | 52     | 64   | 16           | 16   | "                   | "       | 1,038   | "                  | 1/30     | "              |
| "     | 10... | 36.5            | 38.0   | 39.1   | 44     | 56   | 12           | 12   | "                   | "       | 1,045   | "                  | 1/42     | "              |
| "     | 11... | 37.2            | 39.0   | 39.3   | 52     | 64   | 12           | 16   | "                   | "       | 1,050   | "                  | 1/50     | "              |
| "     | 12... | 37.3            | 39.3   | 39.1   | 52     | 60   | 12           | 16   | "                   | "       | 1,040   | Neutral.           | Trace.   | "              |
| "     | 13... | 36.8            | 38.5   | 39.2   | 40     | 64   | 12           | 16   | "                   | "       | 1,030   | Alkaline.          | 1/40     | Trace.         |
| "     | 14... | 37.1            | 39.2   | 39.7   | 52     | 64   | 12           | 16   | "                   | "       | 1,028   | "                  | 1/42     | "              |
| "     | 15... | 37.6            | 38.7   | 39.5   | 56     | 68   | 12           | 16   | "                   | Clear.  | 1,038   | "                  | Nil.     | Nil.           |
| "     | 16... | 37.3            | 38.4   | 38.8   | 56     | 64   | 12           | 16   | "                   | "       | 1,040   | "                  | 1/35     | "              |
| "     | 17... | 37.5            | 38.7   | 39.3   | 52     | 56   | 16           | 16   | "                   | "       | 1,020   | "                  | 1/50     | "              |
| "     | 18... | 38.0            | 38.7   | 39.4   | 48     | 56   | 16           | 16   | "                   | "       | 1,032   | "                  | 1/40     | "              |
| "     |       |                 |        |        |        |      |              |      | "                   | "       | 1,024   | "                  | 1/45     | "              |

As it is now 194 days since the date of inoculation with soiled Horse-Surra blood, and 159 days since the last appearance of the hæmatozoon, it was decided to re-inoculate with soiled horse blood consequently:—

The animal was re-inoculated subcutaneously at 5.30 p.m. with 2.0 c.c. of blood containing numerous hæmatozoa, taken from the jugular vein of Horse No. LXXXIV immediately after death.

|   |      |      |      |    |    |    |    |         |         |       |           |      |        |
|---|------|------|------|----|----|----|----|---------|---------|-------|-----------|------|--------|
| 10...   | 37.0 | 38.8 | 39.1 | 44 | 68 | 12 | 12 | Absent. | Turbid. | 1,026 | Alkaline. | 1/40 | Nil.   |
| There is no swelling or œdema at the seat of inoculation.               |      |      |      |    |    |    |    |         |         |       |           |      |        |
| 11...   | 37.5 | 38.8 | 39.3 | 48 | 52 | 12 | 12 | Absent. | Turbid. | 1,014 | Alkaline. | 1/60 | Trace. |
| There is no swelling or œdema at the seat of inoculation.               |      |      |      |    |    |    |    |         |         |       |           |      |        |
| 12...   | 37.2 | 39.1 | 38.8 | 44 | 60 | 12 | 12 | Absent. | Turbid. | 1,018 | Alkaline. | 1/65 | Trace. |
| There is no swelling or œdema at the seat of inoculation.               |      |      |      |    |    |    |    |         |         |       |           |      |        |
| 13...   | 37.0 | 38.3 | 39.1 | 48 | 52 | 12 | 12 | Absent. | Turbid. | 1,022 | Alkaline. | 1/70 | Trace. |
| There is a slight thickening of the tissues at the seat of inoculation. |      |      |      |    |    |    |    |         |         |       |           |      |        |



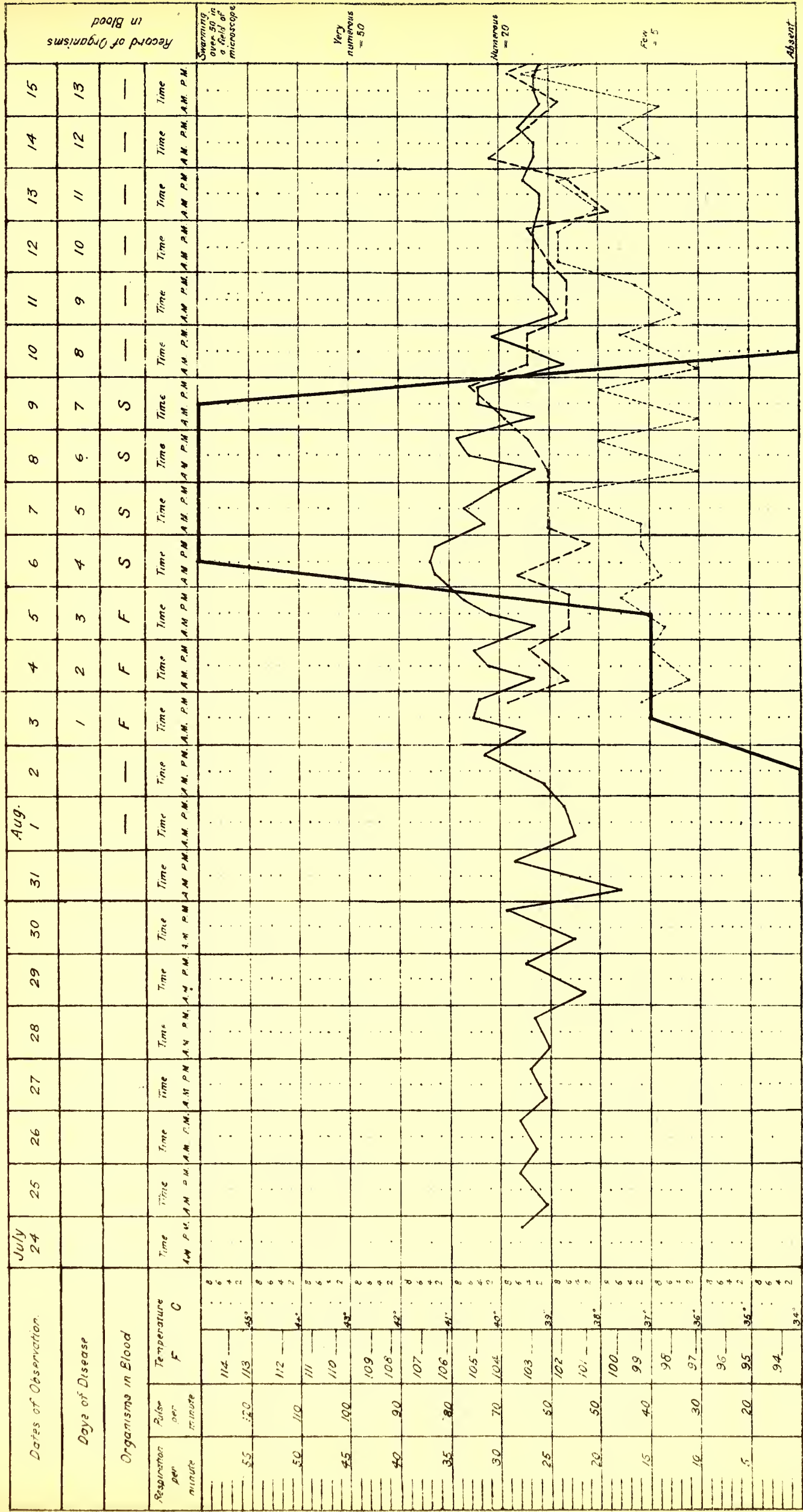
| Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |           |           |                |        |
|-------|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|-----------|-----------|----------------|--------|
|       | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction. | Albumen.  | Hippuric Acid. |        |
| 1893. |                 |        |        |        |      |              |      |                        |         |         |           |           |                |        |
| Feb.  | 14...           | 37.7   | 37.8   | 39.7   | 36   | 52           | 12   | 12                     | Absent. | Clear.  | 1,026     | Alkaline. | Trace.         | Nil.   |
| "     | 15...           | 37.4   | 38.4   | 41.6   | 44   | 64           | 12   | 16                     | "       | "       | 1,024     | Acid.     | 1/80           | "      |
| "     | 16...           | 38.2   | 39.9   | 39.7   | 44   | 52           | 12   | 16                     | "       | Turbid. | 1,020     | Alkaline. | Trace.         | "      |
| "     | 17...           | 37.0   | 39.3   | 39.4   | 48   | 52           | 12   | 12                     | "       | Clear.  | 1,048     | Acid.     | Nil.           | "      |
| "     | 18...           | 37.3   | 38.6   | 39.0   | 48   | 60           | 16   | 16                     | "       | Turbid. | 1,030     | Alkaline. | "              | "      |
| "     | 19...           | 36.5   | 37.5   | 38.7   | 52   | 60           | 12   | 12                     | "       | Clear.  | 1,026     | Neutral.  | Trace.         | "      |
| "     | 20...           | 37.7   | 37.8   | 38.8   | 60   | 64           | 12   | 12                     | "       | Turbid. | 1,028     | Alkaline. | "              | "      |
| "     | 21...           | 37.5   | 38.4   | 38.8   | 48   | 64           | 12   | 16                     | "       | "       | 1,026     | "         | "              | "      |
| "     | 22...           | 37.5   | 37.8   | 39.0   | 48   | 56           | 12   | 16                     | "       | "       | 1,018     | "         | Nil.           | "      |
| "     | 23...           | 38.3   | 38.3   | 39.0   | 60   | 64           | 12   | 16                     | "       | Clear.  | 1,026     | "         | "              | "      |
| "     | 24...           | 38.4   | 38.5   | 39.2   | 56   | 52           | 12   | 16                     | "       | "       | 1,034     | "         | "              | "      |
| "     | 25...           | 37.6   | 37.7   | 39.7   | 48   | 64           | 12   | 16                     | "       | Turbid. | 1,022     | "         | 1/80           | "      |
| "     | 26...           | 37.5   | 38.1   | 40.1   | 64   | 64           | 12   | 16                     | "       | Clear.  | 1,024     | "         | Trace.         | "      |
| "     | 27...           | 37.7   | 38.5   | 39.7   | 64   | 72           | 12   | 16                     | "       | "       | 1,026     | "         | "              | "      |
| "     | 28...           | 37.5   | 38.3   | 38.7   | 48   | 68           | 16   | 16                     | "       | "       | 1,034     | "         | 1/60           | "      |
| Mar.  | 1...            | 38.0   | 38.5   | 39.1   | 72   | 60           | 12   | 12                     | "       | Turbid. | 1,030     | "         | Trace.         | Trace  |
| "     | 2...            | 38.0   | 38.3   | 39.0   | 56   | 60           | 12   | 12                     | "       | Clear.  | 1,038     | "         | 1/66           | Nil.   |
| "     | 3...            | 37.5   | 38.2   | 39.4   | 48   | 60           | 12   | 12                     | "       | "       | 1,036     | "         | Trace.         | "      |
| "     | 4...            | 37.5   | 38.1   | 38.4   | 48   | 52           | 12   | 12                     | "       | "       | 1,032     | "         | 1/80           | "      |
| "     | 5...            | 37.3   | 38.0   | 38.8   | 48   | 52           | 12   | 12                     | "       | "       | 1,030     | "         | Nil.           | "      |
| "     | 6...            | 37.3   | 37.8   | 39.4   | 44   | 44           | 12   | 12                     | "       | Turbid. | 1,030     | Neutral.  | 1/65           | "      |
| "     | 7...            | 37.4   | 38.0   | 39.1   | 36   | 48           | 12   | 16                     | "       | Clear.  | 1,032     | Alkaline. | 1/64           | "      |
| "     | 8...            | 37.6   | 38.2   | 39.1   | 40   | 40           | 12   | 12                     | "       | "       | 1,028     | "         | 1/70           | "      |
| "     | 9...            | 37.6   | 38.5   | 39.2   | 48   | 56           | 12   | 16                     | "       | "       | 1,026     | "         | 1/58           | "      |
| "     | 10...           | 37.4   | 37.8   | 39.1   | 52   | 44           | 12   | 12                     | "       | "       | 1,055     | Acid.     | Nil.           | "      |
| "     | 11...           | 37.0   | 37.3   | 38.4   | 36   | 44           | 12   | 12                     | "       | "       | 1,054     | "         | Trace          | 1/8    |
| "     | 12...           | 37.1   | 38.0   | 39.3   | 40   | 48           | 12   | 12                     | "       | "       | 1,028     | Alkaline. | "              | Trace. |
| "     | 13...           | 38.1   | 38.3   | 39.4   | 44   | 48           | 12   | 12                     | "       | Turbid. | 1,026     | "         | 1/70           | Nil.   |
| "     | 14...           | 36.7   | 38.2   | 39.4   | 36   | 48           | 12   | 12                     | "       | Clear.  | 1,049     | "         | Nil.           | "      |
| "     | 15...           | 37.2   | 37.5   | 38.8   | 36   | 56           | 12   | 12                     | "       | Turbid. | 1,036     | "         | 1/50           | "      |
| "     | 16...           | 37.3   | 38.0   | 39.2   | 40   | 48           | 12   | 16                     | "       | "       | 1,050     | "         | Trace.         | "      |
| "     | 17...           | 37.5   | 38.0   | 39.2   | 48   | 48           | 12   | 12                     | "       | "       | 1,048     | "         | 1/70           | "      |
| "     | 18...           | 37.6   | 38.2   | 38.5   | 40   | 40           | 12   | 12                     | "       | Clear.  | 1,034     | "         | Trace.         | "      |
| "     | 19...           | 37.2   | 37.4   | 38.6   | 40   | 44           | 12   | 12                     | "       | Turbid. | 1,016     | Neutral.  | 1/64           | Trace. |
| "     | 20...           | 36.6   | 37.5   | 38.6   | 36   | 40           | 12   | 16                     | "       | "       | 1,024     | Acid.     | Trace.         | Nil.   |
| "     | 21...           | 36.6   | 37.2   | 38.5   | 36   | 56           | 12   | 12                     | "       | "       | 1,030     | Alkaline. | Nil.           | "      |
| "     | 22...           | 36.0   | 37.2   | 38.2   | 40   | 48           | 12   | 12                     | "       | Clear.  | 1,026     | "         | "              | "      |
| "     | 23...           | 37.0   | 37.7   | 38.4   | 36   | 48           | 8    | 12                     | "       | "       | 1,050     | Acid.     | "              | "      |
| "     | 24...           | 36.5   | 37.4   | 38.6   | 36   | 48           | 12   | 12                     | "       | "       | 1,046     | Alkaline. | "              | "      |
| "     | 25...           | 37.2   | 37.7   | 39.3   | 40   | 52           | 12   | 16                     | "       | Turbid. | 1,036     | Neutral.  | "              | "      |
| "     | 26...           | 37.2   | 37.7   | 38.8   | 36   | 40           | 12   | 12                     | "       | "       | 1,022     | Alkaline. | "              | "      |
| "     | 27...           | 37.5   | 38.4   | 39.3   | 40   | 44           | 12   | 12                     | "       | Clear.  | 1,042     | Neutral.  | "              | "      |
| "     | 28...           | 38.1   | 39.3   | 40.0   | 44   | 48           | 12   | 12                     | "       | "       | 1,048     | Acid.     | "              | "      |
| "     | 29...           | 38.4   | 38.7   | 39.4   | 44   | 48           | 12   | 16                     | "       | Turbid. | 1,036     | "         | "              | "      |
| "     | 30...           | 38.3   | 39.4   | 40.7   | 44   | 52           | 12   | 12                     | Few.    | Clear.  | 1,036     | Neutral.  | "              | "      |
| "     | 31...           | 37.5   | 38.7   | 39.3   | 40   | 52           | 12   | 20                     | Absent. | Turbid. | 1,032     | "         | "              | "      |
| April | 1...            | 38.1   | 38.8   | 39.7   | 40   | 60           | 14   | 28                     | "       | Clear.  | 1,032     | Acid.     | "              | "      |
| "     | 2...            | 37.7   | 39.1   | 39.3   | 56   | 60           | 12   | 12                     | "       | Turbid. | 1,028     | Neutral.  | "              | "      |
| "     | 3...            | 37.7   | 38.7   | 39.3   | 40   | 56           | 12   | 16                     | "       | "       | 1,020     | Alkaline. | "              | "      |
| "     | 4...            | 37.7   | 38.8   | 39.3   | 40   | 48           | 12   | 28                     | "       | "       | 1,030     | "         | "              | "      |
| "     | 5...            | 37.4   | 38.7   | 39.3   | 56   | 52           | 12   | 16                     | "       | "       | 1,020     | Neutral.  | "              | "      |
| "     | 6...            | 37.3   | 38.4   | 39.5   | 40   | 48           | 12   | 20                     | "       | Clear.  | 1,016     | Alkaline. | "              | "      |
| "     | 7...            | 37.2   | 38.3   | 39.6   | 36   | 40           | 16   | 16                     | "       | "       | 1,022     | "         | "              | "      |
| "     | 8...            | 37.4   | 38.4   | 39.0   | 36   | 48           | 12   | 12                     | "       | Turbid. | 1,022     | "         | "              | "      |
| "     | 9...            | 37.7   | 38.1   | 39.4   | 36   | 48           | 12   | 16                     | "       | Clear.  | 1,036     | "         | "              | "      |
| "     | 10...           | 38.2   | 38.5   | 39.2   | 40   | 48           | 12   | 20                     | "       | Turbid. | 1,020     | "         | "              | "      |
| "     | 11...           | 37.3   | 38.7   | 38.8   | 32   | 40           | 12   | 16                     | "       | "       | 1,012     | "         | "              | "      |
| "     | 12...           | 37.6   | 39.0   | 38.5   | 40   | 40           | 12   | 12                     | "       | Clear.  | 1,040     | "         | "              | "      |
| "     | 13...           | 37.5   | 38.6   | 38.4   | 36   | 44           | 12   | 12                     | "       | Turbid. | 1,016     | "         | "              | "      |
| "     | 14...           | 37.2   | 38.2   | 38.6   | 40   | 44           | 12   | 12                     | "       | "       | 1,020     | "         | "              | "      |
| "     | 15...           | 37.2   | 38.1   | 39.3   | 40   | 44           | 12   | 12                     | "       | "       | 1,026     | "         | "              | "      |
| "     | 16...           | 37.4   | 38.3   | 38.5   | 32   | 60           | 12   | 12                     | "       | "       | 1,026     | Neutral.  | "              | "      |
| "     | 17...           | 37.2   | 38.5   | 39.0   | 40   | 40           | 12   | 16                     | "       | Clear.  | 1,026     | "         | "              | "      |
| "     | 18...           | 37.3   | 38.5   | 39.5   | 32   | 44           | 12   | 20                     | "       | Turbid. | 1,042     | Alkaline. | "              | "      |
| "     | 19...           | 36.5   | 38.7   | 39.2   | 32   | 48           | 12   | 16                     | "       | Clear.  | 1,036     | "         | "              | "      |
| "     | 20...           | 38.0   | 38.6   | 38.8   | 32   | 48           | 12   | 16                     | "       | Turbid. | 1,016     | "         | "              | "      |
| "     | 21...           | 37.0   | 38.2   | 38.7   | 40   | 44           | 16   | 12                     | "       | "       | 1,042     | "         | "              | "      |
| "     | 22...           | 37.0   | 37.7   | 38.4   | 48   | 48           | 12   | 12                     | "       | "       | 1,034     | "         | "              | "      |
| "     | 23...           | 37.0   | 38.0   | 38.7   | 36   | 44           | 12   | 16                     | "       | Clear.  | 1,030     | "         | "              | "      |
| "     | 24...           | 37.3   | 38.7   | 39.0   | 36   | 44           | 12   | 12                     | "       | Turbid. | 1,026     | "         | "              | "      |
| "     | 25...           | 37.4   | 38.3   | 38.3   | 44   | 40           | 12   | 12                     | "       | "       | 1,030     | "         | "              | "      |



| Month<br>and Date. | Temperature °C. |       |       | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |           |          |                |
|--------------------|-----------------|-------|-------|--------|------|--------------|------|------------------------|---------|---------|-----------|----------|----------------|
|                    | A.M.            | 1P.M. | 5P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction. | Albumen. | Hippuric Acid. |
| 1893.              |                 |       |       |        |      |              |      |                        |         |         |           |          |                |
| April 26...        | 37.5            | 38.1  | 38.8  | 36     | 40   | 12           | 14   | Absent.                | Turbid. | 1,036   | Alkaline. | Nil.     | Trace.         |
| " 27...            | 37.2            | 38.4  | 38.8  | 36     | 39   | 8            | 12   | "                      | "       | 1,022   | "         | "        | "              |
| " 28...            | 36.7            | 38.1  | 39.1  | 40     | 44   | 12           | 12   | "                      | "       | 1,030   | "         | "        | "              |
| " 29...            | 37.2            | 38.1  | 38.8  | 44     | 40   | 12           | 13   | "                      | "       | 1,020   | "         | "        | Nil.           |
| " 30...            | 37.2            | 38.2  | 39.4  | 40     | 36   | 12           | 13   | "                      | Clear.  | 1,025   | "         | "        | Trace.         |
| May 1...           | 36.6            | 38.1  | 39.5  | 40     | 40   | 12           | 12   | "                      | Turbid. | 1,026   | "         | "        | Nil.           |
| " 2...             | 37.1            | 38.3  | 38.8  | 32     | 44   | 12           | 12   | "                      | Clear.  | 1,025   | "         | "        | "              |
| " 3...             | 37.1            | 38.3  | 39.3  | 36     | 48   | 12           | 16   | "                      | Turbid. | 1,031   | "         | "        | Trace.         |
| " 4...             | 37.6            | 38.5  | 39.4  | 40     | 52   | 12           | 16   | "                      | Clear.  | 1,032   | "         | "        | "              |
| " 5...             | 37.5            | 38.8  | 39.1  | 36     | 52   | 12           | 12   | "                      | "       | 1,020   | "         | "        | "              |
| " 6...             | 36.6            | 38.4  | 38.4  | 36     | 52   | 12           | 16   | "                      | Turbid. | 1,012   | "         | "        | Nil.           |
| " 7...             | 37.3            | 38.2  | 38.0  | 40     | 40   | 12           | 12   | "                      | "       | 1,018   | "         | "        | "              |
| " 8...             | 37.5            | 37.8  | 38.8  | 44     | 52   | 16           | 16   | "                      | Clear.  | 1,012   | "         | "        | "              |
| " 9...             | 36.4            | 38.6  | 39.1  | 52     | 60   | 16           | 20   | "                      | "       | 1,033   | "         | "        | "              |
| " 10...            | 37.1            | 38.3  | 38.8  | 44     | 52   | 12           | 16   | "                      | Turbid. | 1,040   | "         | "        | "              |
| " 11...            | 36.5            | 38.4  | 39.0  | 36     | 48   | 12           | 12   | "                      | "       | 1,016   | "         | "        | 1/15           |
| " 12...            | 37.6            | 38.3  | 38.4  | 40     | 48   | 16           | 16   | "                      | "       | 1,014   | "         | "        | Trace.         |
| " 13...            | 37.5            | 38.0  | 38.6  | 52     | 60   | 12           | 16   | "                      | "       | 1,022   | "         | "        | 1/10           |
| " 14...            | 36.8            | 38.2  | 38.7  | 44     | 48   | 16           | 16   | "                      | "       | 1,041   | "         | "        | 1/8            |
| " 15...            | 37.1            | 38.0  | 39.0  | 36     | 52   | 12           | 16   | "                      | "       | 1,034   | "         | "        | 1/10           |
| " 16...            | 37.6            | 38.4  | 38.7  | 44     | 48   | 16           | 16   | "                      | Clear.  | 1,030   | "         | "        | 1/13           |
| " 17...            | 37.1            | 38.4  | 39.0  | 36     | 64   | 12           | 12   | "                      | Turbid. | 1,040   | "         | "        | 1/10           |
| " 18...            | 37.0            | 38.0  | 39.2  | 44     | 48   | 16           | 16   | "                      | Clear.  | 1,016   | "         | "        | Trace.         |
| " 19...            | 37.5            | 38.2  | 38.0  | 40     | 52   | 16           | 16   | "                      | "       | 1,028   | "         | "        | "              |
| " 20...            | 37.4            | 38.1  | 38.4  | 40     | 64   | 12           | 20   | "                      | Turbid. | 1,010   | "         | "        | 1/12           |
| " 21...            | 37.3            | 38.2  | 38.1  | 40     | 52   | 12           | 16   | "                      | Clear.  | 1,010   | "         | "        | 1/10           |
| " 22...            | 37.6            | 38.1  | 39.2  | 52     | 52   | 12           | 16   | "                      | "       | 1,040   | "         | "        | 1/6            |
| " 23...            | 37.5            | 38.4  | 39.2  | 44     | 48   | 16           | 20   | "                      | "       | 1,018   | "         | "        | 1/8            |
| " 24...            | 38.0            | 38.6  | 38.7  | 44     | 52   | 20           | 16   | "                      | "       | 1,036   | "         | "        | Trace.         |
| " 25...            | 37.4            | 38.5  | 34.6  | 44     | 60   | 12           | 20   | "                      | Turbid. | 1,000   | "         | "        | 1/8            |
| " 26...            | 38.2            | 38.8  | 38.5  | 48     | 52   | 16           | 12   | "                      | "       | 1,028   | "         | "        | Trace.         |
| " 27...            | 38.5            | 39.2  | 37.3  | 48     | 48   | 16           | 16   | "                      | Clear.  | 1,031   | "         | "        | "              |
| " 28...            | 38.4            | 38.8  | 37.8  | 52     | 52   | 12           | 12   | "                      | "       | 1,038   | Neutral.  | "        | "              |
| " 29...            | 37.0            | 37.6  | 37.8  | 52     | 40   | 12           | 12   | "                      | "       | 1,042   | Acid.     | "        | 1/12           |
| " 30...            | 37.4            | 38.0  | 38.3  | 36     | 64   | 16           | 16   | "                      | Turbid. | 1,036   | Alkaline. | "        | Trace.         |
| " 31...            | 37.8            | 38.7  | 38.6  | 48     | 64   | 12           | 12   | "                      | "       | 1,056   | "         | "        | 1/12           |
| June 1...          | 38.0            | 37.8  | 38.0  | 52     | 52   | 16           | 20   | "                      | "       | 1,052   | "         | "        | 1/8            |
| " 2...             | 38.5            | 39.8  | 40.8  | 48     | 68   | 12           | 16   | "                      | "       | 1,010   | "         | "        | 1/8            |
| " 3...             | 37.5            | 38.5  | 38.6  | 48     | 64   | 12           | 16   | "                      | "       | 1,016   | "         | "        | 1/10           |
| " 4...             | 40.6            | 41.3  | 42.0  | 64     | 64   | 32           | 40   | "                      | "       | 1,050   | "         | "        | 1/6            |
| " 5...             | 37.4            | 38.5  | 38.3  | 52     | 64   | 16           | 16   | "                      | Clear.  | 1,014   | "         | "        | Trace.         |
| " 6...             | 37.2            | 39.0  | 39.1  | 52     | 68   | 12           | 20   | "                      | Turbid. | 1,016   | "         | "        | 1/8            |
| " 7...             | 37.8            | 38.5  | 38.6  | 52     | 68   | 16           | 12   | "                      | Clear.  | 1,020   | Neutral.  | "        | Trace.         |
| " 8...             | 38.2            | 38.4  | 38.8  | 52     | 64   | 16           | 28   | "                      | Turbid. | 1,042   | Alkaline. | "        | 1/8            |
| " 9...             | 38.1            | 39.1  | 38.4  | 60     | 64   | 16           | 12   | "                      | Clear.  | 1,038   | "         | "        | Nil.           |
| " 10...            | 37.4            | 38.7  | 39.1  | 48     | 74   | 12           | 12   | "                      | Turbid. | 1,020   | Neutral.  | "        | Trace.         |
| " 11...            | 37.4            | 38.0  | 38.4  | 52     | 56   | 12           | 16   | "                      | "       | 1,026   | Alkaline. | "        | "              |
| " 12...            | 37.4            | 38.8  | 39.3  | 44     | 54   | 12           | 12   | "                      | "       | 1,038   | "         | "        | 1/10           |
| " 13...            | 37.8            | 38.7  | 38.7  | 40     | 48   | 16           | 12   | "                      | "       | 1,014   | "         | "        | 1/8            |
| " 14...            | 38.1            | 38.3  | 38.6  | 44     | 52   | 16           | 12   | "                      | Clear.  | 1,014   | "         | "        | Nil.           |
| " 15...            | 36.4            | 38.1  | 37.4  | 40     | 64   | 12           | 12   | "                      | Turbid. | 1,020   | "         | "        | Trace.         |
| " 16...            | 35.6            | 36.2  | 36.8  | 52     | 56   | 16           | 20   | "                      | Clear.  | 1,030   | "         | "        | "              |
| " 17...            | 37.0            | 38.4  | 38.4  | 48     | 52   | 12           | 12   | "                      | "       | 1,016   | "         | "        | "              |
| " 18...            | 36.2            | 36.5  | 37.6  | 40     | 44   | 16           | 16   | "                      | "       | 1,014   | Acid.     | "        | Nil.           |
| " 19...            | 37.0            | 37.4  | 37.1  | 52     | 52   | 12           | 16   | "                      | "       | 1,028   | Alkaline. | "        | "              |
| " 20...            | 36.0            | 37.0  | 38.2  | 48     | 52   | 20           | 12   | "                      | Turbid. | 1,016   | "         | "        | 1/8            |
| " 21...            | 37.4            | 37.8  | 38.3  | 60     | 52   | 12           | 16   | "                      | "       | 1,003   | "         | "        | 1/6            |
| " 22...            | 36.8            | 36.8  | 37.1  | 44     | 64   | 12           | 12   | "                      | "       | 1,028   | "         | "        | Nil.           |
| " 23...            | 36.8            | 38.2  | 37.7  | 44     | 64   | 12           | 12   | "                      | "       | 1,054   | "         | Trace.   | "              |
| " 24...            | 36.8            | 37.7  | 37.5  | 52     | 48   | 12           | 12   | "                      | "       | 1,050   | "         | Nil.     | 1/8            |
| " 25...            | 36.8            | 37.2  | 37.8  | 40     | 56   | 12           | 16   | "                      | Clear.  | 1,054   | "         | "        | 1/6            |
| " 26...            | 36.2            | 38.2  | 39.0  | 48     | 60   | 12           | 20   | "                      | Turbid. | 1,051   | "         | "        | 1/6            |
| " 27...            | 37.0            | 39.6  | 39.6  | 56     | 72   | 8            | 16   | "                      | "       | 1,056   | "         | Trace.   | Nil.           |
| " 28...            | 38.0            | 39.3  | 39.7  | 76     | 76   | 16           | 12   | "                      | Clear.  | 1,048   | "         | "        | 1/8            |
| " 29...            | 37.2            | 38.2  | 38.0  | 52     | 60   | 12           | 12   | "                      | "       | 1,026   | "         | Nil.     | Nil.           |
| " 30...            | 38.0            | 38.5  | 38.6  | 60     | 68   | 16           | 12   | "                      | Turbid. | 1,041   | "         | "        | "              |

RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Bull \_\_\_\_\_ Age, 4 years Sex \_\_\_\_\_ Colour \_\_\_\_\_  
Disease, 'Rat Surra' through several animals Date of Inoculation, 31.7.1892 Result \_\_\_\_\_ Date of Result \_\_\_\_\_ Register No. III.



X Inoculated subcutaneously with 1.0 cc. of blood containing numerous hematozoa taken from Jugular Vein of Horse No. LXVII.





Bull \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_ Colour \_\_\_\_\_  
Disease \_\_\_\_\_ Date of \_\_\_\_\_ Result \_\_\_\_\_ Register No. III

[illegible]

Drawn & Litho: Govt. Photoduc. Office Poona 1893

Pulse.....

Respiration.....



RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Bull \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_ Colour \_\_\_\_\_  
Disease \_\_\_\_\_ Date of \_\_\_\_\_ Result \_\_\_\_\_ Date of Result \_\_\_\_\_ Register No. III

| Dates of Observation.        | Sep. 8                                    | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 27  | 28  | 29  | 30  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|                              | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      |
| Days of Disease              | 37  | 38  | 39  | 40  | 41  | 42  | 43  | 44  | 45  | 46  | 47  | 48  | 49  | 50  | 51  | 52  | 53  | 54  | 55  | 56  | 57  | 58  | 59  |
|                              | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     |
| Organisms in Blood           | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      | Time                                      |
|                              | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     | AM PM                                     |
| Respiration per minute       | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  |
|                              | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  | 55  |
| Pulse per minute             | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       |
|                              | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       | 120                                       |
| Temperature F                | 114                                       | 113                                       | 112                                       | 111                                       | 110                                       | 109                                       | 108                                       | 107                                       | 106                                       | 105                                       | 104                                       | 103                                       | 102                                       | 101                                       | 100                                       | 99  | 98  | 97  | 96  | 95  | 94  | 93  | 92  |
|                              | 114                                       | 113                                       | 112                                       | 111                                       | 110                                       | 109                                       | 108                                       | 107                                       | 106                                       | 105                                       | 104                                       | 103                                       | 102                                       | 101                                       | 100                                       | 99  | 98  | 97  | 96  | 95  | 94  | 93  | 92  |
| Temperature C                | 45  | 43  | 42  | 41  | 40  | 39  | 38  | 37  | 36  | 35  | 34  | 33  | 32  | 31  | 30  | 29  | 28  | 27  | 26  | 25  | 24  | 23  | 22  |
|                              | 45  | 43  | 42  | 41  | 40  | 39  | 38  | 37  | 36  | 35  | 34  | 33  | 32  | 31  | 30  | 29  | 28  | 27  | 26  | 25  | 24  | 23  | 22  |
| Record of Organisms in Blood | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope |
|                              | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope | Swarming over 50 in a field of microscope |
| Very numerous = 50           | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        |
|                              | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        | Very numerous = 50                        |
| Numerous = 20                | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             |
|                              | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             | Numerous = 20                             |
| Few = 5                      | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   |
|                              | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   | Few = 5                                   |
| Absent                       | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    |
|                              | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    | Absent                                    |

Hamoglobin curve \_\_\_\_\_  
Temperature \_\_\_\_\_  
Pulse \_\_\_\_\_  
Respiration \_\_\_\_\_  
Drawn & Litho. by: Photomicro: Office, Pough 1893





RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Bull \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_ Colour \_\_\_\_\_  
Disease \_\_\_\_\_ Date of \_\_\_\_\_ Result \_\_\_\_\_ Date of Result \_\_\_\_\_ Register No. III.

| Dates of Observation.                              | Oct.<br>1 | 2       | 3       | 4       | 5       | 6       | 7       | 8       | 9       | 10      | 11      | 12      | 13      | 14      | 15      | 16      | 17      | 18      | 19      | 20      | 21      | 22      | 23      |
|--|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|  |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Days of Disease                                    | 60        | 61      | 62      | 63      | 64      | 65      | 66      | 67      | 68      | 69      | 70      | 71      | 72      | 73      | 74      | 75      | 76      | 77      | 78      | 79      | 80      | 81      | 82      |
|  | AM P.M.   | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. | AM P.M. |
| Organisms in Blood                                 |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|  |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Respiration<br>per<br>minute                       |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|  |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Pulse<br>per<br>minute                             |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|  |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Temperature<br>F                                   |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|  |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Temperature<br>C                                   |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|  |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Record of Organisms<br>in Blood                    |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|  |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Swarming<br>over 50 in<br>a field of<br>microscope |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|  |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Very<br>numerous<br>= 50                           |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|  |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Numerous<br>= 20                                   |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|  |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Few<br>= 5   |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|  |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Absent   |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|  |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |

15-1151  
Hematozoan curve \_\_\_\_\_  
Temperature \_\_\_\_\_  
Pulse \_\_\_\_\_  
Respiration \_\_\_\_\_  
Drawn by Litch: Sent. Photoducos. Office Pease 1893

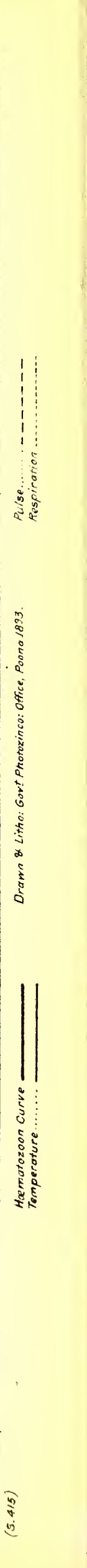




RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

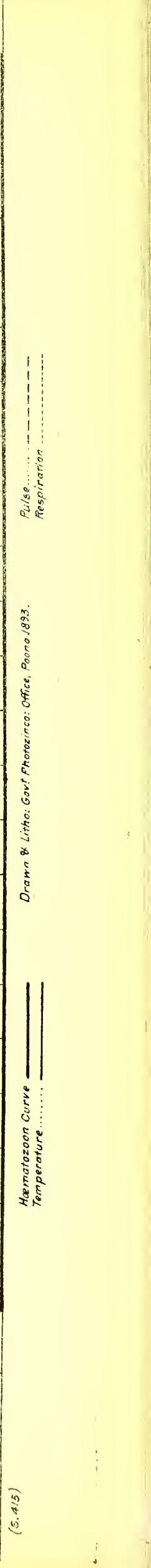
Bull. \_\_\_\_\_ Age, \_\_\_\_\_ Sex, \_\_\_\_\_ Colour, \_\_\_\_\_  
Disease, \_\_\_\_\_ Date of \_\_\_\_\_ Result, \_\_\_\_\_ Date of Result, \_\_\_\_\_ Register No. III

| Dates of Observation. |  |  | Temperature |  | Time | Oct. |  | Nov. |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time 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| Dates of Observation.   |                   | Nov. 16       | 17            | 18        | 19        | 20        | 21        | 22        | 23        | 24        | 25        | 26        | 27        | 28        | 29        | 30        | Dec. 1    | 2         | 3         | 4         | 5         | 6         | 7         | 8         |           |
|-------------------------|-------------------|---------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Days of Disease         |                   | 106           | 107           | 108       | 109       | 110       | 111       | 112       | 113       | 114       | 115       | 116       | 117       | 118       | 119       | 120       | 121       | 122       | 123       | 124       | 125       | 126       | 127       | 128       |           |
| Organisms in Blood.     |                   | —             | —             | —         | —         | —         | —         | —         | —         | —         | —         | —         | —         | —         | —         | —         | —         | —         | —         | —         | —         | —         | —         | —         |           |
| Respiration per minute. | Pulse per minute. | Temperature F | Temperature C | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. | Time A.M. | Time P.M. |
| 55                      | 120               | 114           | 45°           | 8         | 6         | 4         | 2         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 50                      | 116               | 112           | 44°           | 8         | 6         | 4         | 2         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 45                      | 100               | 111           | 43°           | 8         | 6         | 4         | 2         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 40                      | 90                | 109           | 42°           | 8         | 6         | 4         | 2         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 35                      | 80                | 107           | 41°           | 8         | 6         | 4         | 2         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 30                      | 70                | 105           | 40°           | 8         | 6         | 4         | 2         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 25                      | 60                | 103           | 39°           | 8         | 6         | 4         | 2         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 20                      | 50                | 101           | 38°           | 8         | 6         | 4         | 2         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 15                      | 40                | 99            | 37°           | 8         | 6         | 4         | 2         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 10                      | 30                | 97            | 36°           | 8         | 6         | 4         | 2         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 5                       | 20                | 95            | 35°           | 8         | 6         | 4         | 2         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                         |                   | 94            | 34°           | 8         | 6         | 4         | 2         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |













RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

Bull No III

Age,

Sex, Male

Colour, Black & white

Disease, Surra inoculated

Dates of inoculation { 31.7.92  
9.2.93

Result, Death

Date of Result, 28.9.93

Register No. III

| Dates of Observation.        |                        | Jan./93     |     | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   |
|------------------------------|------------------------|-------------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Days of Disease              |                        |             | 152 | 153  | 154  | 155  | 156  | 157  | 158  | 159  | 160  | 161  | 162  | 163  | 164  | 165  | 166  | 167  | 168  | 169  | 170  | 171  | 172  | 173  | 174  |      |
| Organisms in Blood.          |                        |             | —   | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| Respiration<br>per<br>minute | Pulse<br>per<br>minute | Temperature |     | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |
|                              |                        | F           | C   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 114 | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 55                           | 120                    |             | 113 | 45°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 112 | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 50                           | 110                    |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 111 | 44°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 45                           | 100                    |             | 110 | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 43°  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 109 | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 108 | 42°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 40                           | 90                     |             |     | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 107 | 41°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 35                           | 80                     |             | 106 | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 105 | 41°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 104 | 40°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 103 | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 102 | 39°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 25                           | 60                     |             |     | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 101 | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 100 | 38°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 99  | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 98  | 37°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 97  | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 96  | 36°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 95  | 35°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 94  | 6    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 4    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             |     | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                              |                        |             | 94  | 34°  | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

(5.415)

Hæmatocrit Curve  
Temperature .....

Drawn & Litho: Govt. Photoduplication Office, Poona 1894.

Pulse  
Respiration



RECORDED

Bull No. III      Age,      Sex Male      Colour, Black & white      Date of Result, 28.9.93      Register No. III      Disease, Surra inoculated      Dates of inoculation { 31.7.92      Result,      Death      Date of Result, 28.9.93      Register No. III

| Dates of Observation.  |                  | Jan. 24     | 25  | 26   | 27   | 28   | 29   | 30   | 31   | Feb. 1 | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15  |
|------------------------|------------------|-------------|-----|------|------|------|------|------|------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
| Respiration per minute | Pulse per minute | Temperature |     | Time |      | Time |      | Time |      | Time   |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Record of Organisms in Blood              |
|                        |                  | F           | C   | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M.   | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |   |
| 55                     | 120              | 114         | 45° | 8    | 4    | 2    |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      | Swarming over 50 in a field of microscope |
|                        |                  | 113         |     |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |   |
| 50                     | 110              | 112         | 44° | 8    | 6    | 4    | 2    |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      | Very numerous =50                         |
|                        |                  | 111         |     |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |   |
| 45                     | 100              | 110         | 43° | 8    | 6    | 4    | 2    |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      | Numerous =20                              |
|                        |                  | 109         |     |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |   |
| 40                     | 90               | 108         | 42° | 8    | 6    | 4    | 2    |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      | Few =5                                    |
|                        |                  | 107         |     |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |   |
| 35                     | 80               | 106         | 41° | 8    | 6    | 4    | 2    |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      | Absent                                    |
|                        |                  | 105         |     |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |   |
| 30                     | 70               | 104         | 40° | 8    | 6    | 4    | 2    |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      | X   |
|                        |                  | 103         |     |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |   |
| 25                     | 60               | 102         | 39° | 8    | 6    | 4    | 2    |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      | X   |
|                        |                  | 101         |     |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |   |
| 20                     | 50               | 100         | 38° | 8    | 6    | 4    | 2    |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      | X   |
|                        |                  | 99          |     |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |   |
| 15                     | 40               | 98          | 37° | 8    | 6    | 4    | 2    |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      | X   |
|                        |                  | 97          |     |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |   |
| 10                     | 30               | 96          | 36° | 8    | 6    | 4    | 2    |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      | X   |
|                        |                  | 95          |     |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |   |
| 5                      | 20               | 95          | 35° | 8    | 6    | 4    | 2    |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      | X   |
|                        |                  | 94          |     |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |   |
|                        |                  | 94          | 34° | 8    | 6    | 4    | 2    |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      | X   |
|                        |                  |             |     |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |   |

(5.415)      Hematozoan Curve      Drawn & Litho: Govt Photodupl. Office, Poona 1894.      Pulse      Respiration      X Re-inoculated subcutaneously at 5.30 p.m. with 2.0 c.c. of blood containing numerous haematozoa, taken from the jugular vein of horse No. LXXXIV immediately after death.





RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

Bull No III      Age,      Sex, Male      Colour, Black & white      Date of Result, 28.9.93      Register No. III

Disease, Suck inoculated      Dates of inoculation { 31.7.92      Result, Death      Date of Result, 28.9.93      Register No. III

| Dates of Observation.  |                  | Feb. 16       | 17            | 18        | 19        | 20        | 21        | 22        | 23        | 24        | 25        | 26        | 27        | 28        | Mar. 1    | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10        |
|------------------------|------------------|---------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Days of Disease        |                  | 198           | 199           | 200       | 201       | 202       | 203       | 204       | 205       | 206       | 207       | 208       | 209       | 210       | 211       | 212       | 213       | 214       | 215       | 216       | 217       | 218       | 219       | 220       |
| Organisms in Blood.    |                  |               |               |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| Respiration per minute | Pulse per minute | Temperature F | Temperature C | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      |
|                        |                  | 114           | 45°           | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. |
| 55                     | 120              | 113           | 45°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 50                     | 110              | 112           | 44°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 45                     | 100              | 111           | 43°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 40                     | 90               | 109           | 42°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 35                     | 80               | 107           | 41°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 30                     | 70               | 105           | 40°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 25                     | 60               | 103           | 39°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 20                     | 50               | 102           | 38°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 15                     | 40               | 100           | 37°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 10                     | 30               | 98            | 36°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 5                      | 20               | 96            | 35°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                        |                  | 94            | 34°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |

(S. 415)      Haematocrit Curve      Pulse      Respiration      Drawn & Litho: Govt. Photodupl. Office, Poona 1894.





| Dates of Observation    |                   | Mar. 11       | 12            | 13      | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | April 1 | 2    |
|-------------------------|-------------------|---------------|---------------|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------|------|
| Days of Disease         |                   | 221           | 222           | 223     | 224  | 225  | 226  | 227  | 228  | 229  | 230  | 231  | 232  | 233  | 234  | 235  | 236  | 237  | 238  | 239  | 240  | 241  | 242     | 243  |
| Organisms in Blood.     |                   |               |               |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | F    |      |         |      |
| Respiration per minute. | Pulse per minute. | Temperature F | Temperature C | Time    | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time    | Time |
|                         |                   | 114           |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
| 55                      | 120               | 113           | 45°           |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   | 112           |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
| 50                      | 110               |               | 44°           |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   | 111           |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
| 45                      | 100               | 110           |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   |               | 45°           |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   | 109           |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
| 40                      | 90                | 108           |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   |               | 42°           |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   | 107           |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
| 35                      | 80                | 106           |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   |               | 41°           |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   | 105           |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
| 30                      | 70                | 104           |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   |               | 40°           |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   | 103           |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
| 25                      | 60                |               | 39°           |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   | 102           |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
| 20                      | 50                | 101           |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   |               | 38°           |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   | 100           |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
| 15                      | 40                | 99            |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   |               | 37°           |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   | 98            |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
| 10                      | 30                | 97            |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   |               | 36°           |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
| 5                       | 20                | 96            |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   |               | 35°           |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   | 95            |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   |               |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   | 94            |               | 8 6 4 2 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |
|                         |                   |               | 34°           |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |         |      |

(S. 415)

Haematocrit Curve \_\_\_\_\_ Pulse \_\_\_\_\_  
Temperature ..... Respiration .....

Drawn & Litho: Govt Photodupl. Office, Poona 1894.

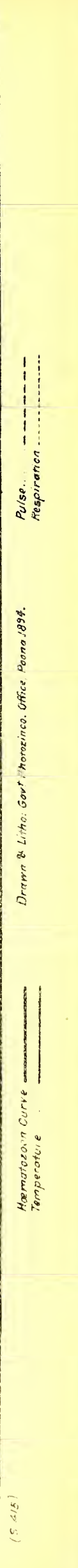




RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

Bull. No. III      Age,      Sex,      Colour,      Date of Result, 29.9.93      Register No. III

| Dates of Observation.   |                   | April 3/93    |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
|-------------------------|-------------------|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Days of Disease         |                   | 244           | 245           | 246  | 247  | 248  | 249  | 250  | 251  | 252  | 253  | 254  | 255  | 256  | 257  | 258  | 259  | 260  | 261  | 262  | 263  | 264  | 265  | 266  |  |
| Organisms in Blood.     |                   | —             |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| Respiration per minute. | Pulse per minute. | Temperature F | Temperature C | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |  |
|                         |                   | 114           | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
| 55                      | 120               | 113           | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
|                         |                   | 112           | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
| 50                      | 110               | 111           | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
|                         |                   | 110           | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
| 45                      | 100               | 109           | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
|                         |                   | 108           | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
| 40                      | 90                | 107           | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
|                         |                   | 106           | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
| 35                      | 80                | 105           | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
|                         |                   | 104           | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
| 30                      | 70                | 103           | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
|                         |                   | 102           | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
| 25                      | 60                | 101           | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
|                         |                   | 100           | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
| 20                      | 50                | 99            | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
|                         |                   | 98            | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
| 15                      | 40                | 97            | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
|                         |                   | 96            | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
| 10                      | 30                | 95            | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |
|                         |                   | 94            | 45°           | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    |  |







| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Urine.  |         |           |         |                |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|---------|---------|-----------|---------|----------------|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | Colour. | Sp. Gr. | Reaction. | Albumen | Hippuric Acid. |
| 1894.           |                 |        |        |        |      |              |      |                     |         |         |           |         |                |
| July 1...       | 38.0            | 38.0   | 38.4   | 56     | 60   | 12           | 12   | Absent.             | Clear.  | 1,020   | Alkaline. | Nil.    | Nil.           |
| " 2...          | 37.6            | 38.0   | 38.6   | 44     | 52   | 16           | 16   | "                   | Turbid. | 1,044   | "         | "       | 1/12           |
| " 3...          | 37.6            | 37.8   | 38.4   | 48     | 54   | 12           | 12   | "                   | "       | 1,034   | "         | "       | "              |
| " 4...          | 37.0            | 38.2   | 37.4   | 44     | 60   | 12           | 12   | "                   | "       | 1,028   | "         | "       | 1/8            |
| " 5...          | 37.4            | 39.4   | 39.2   | 40     | 68   | 12           | 12   | "                   | Clear.  | 1,044   | "         | "       | 1/8            |
| " 6...          | 37.4            | 40.6   | 39.8   | 52     | 72   | 12           | 16   | "                   | Turbid. | 1,040   | "         | "       | 1/6            |
| " 7...          | 37.8            | 38.2   | 38.6   | 52     | 56   | 12           | 16   | "                   | Clear.  | 1,026   | "         | "       | Trace.         |
| " 8...          | 37.0            | 38.4   | 38.8   | 44     | 56   | 12           | 12   | "                   | "       | 1,020   | "         | "       | Nil.           |
| " 9...          | 37.4            | 37.8   | 38.2   | 48     | 48   | 12           | 12   | "                   | Turbid. | 1,020   | "         | "       | "              |
| " 10...         | 37.0            | 38.0   | 37.6   | 44     | 52   | 12           | 12   | "                   | "       | 1,028   | "         | "       | 1/6            |
| " 11...         | 36.6            | 37.5   | 37.8   | 44     | 56   | 12           | 12   | "                   | "       | 1,046   | "         | "       | 1/12           |
| " 12...         | 36.8            | 37.2   | 38.4   | 40     | 48   | 12           | 12   | "                   | "       | 1,036   | "         | "       | Trace.         |
| " 13...         | 37.6            | 38.0   | 38.6   | 48     | 52   | 12           | 12   | "                   | "       | 1,046   | "         | "       | "              |
| " 14...         | 37.8            | 38.2   | 40.0   | 44     | 56   | 12           | 12   | "                   | "       | 1,056   | "         | "       | 1/6            |
| " 15...         | 37.8            | 37.8   | 38.4   | 56     | 48   | 12           | 12   | "                   | "       | 1,046   | "         | "       | 1/6            |
| " 16...         | 37.4            | 38.2   | 39.3   | 48     | 60   | 12           | 12   | "                   | "       | 1,040   | "         | "       | "              |
| " 17...         | 38.6            | 38.4   | 39.4   | 60     | 64   | 12           | 12   | "                   | "       | 1,034   | "         | "       | 1/8            |
| " 18...         | 38.0            | 38.6   | 40.0   | 56     | 56   | 12           | 12   | Few.                | "       | 1,036   | "         | "       | 1/12           |
| " 19...         | 38.4            | 39.8   | 40.0   | 56     | 72   | 12           | 16   | Very nume-<br>rous. | "       | 1,024   | "         | Trace.  | Trace.         |
| " 20...         | 38.0            | 38.8   | 39.8   | 64     | 62   | 12           | 20   | "                   | Clear.  | 1,011   | "         | Nil.    | Nil.           |
| " 21...         | 37.4            | 37.6   | 38.1   | 70     | 64   | 11           | 11   | Absent.             | "       | 1,026   | "         | Trace.  | "              |
| " 22...         | 37.6            | 37.8   | 38.5   | 56     | 60   | 12           | 14   | "                   | Turbid. | 1,027   | "         | "       | Trace.         |
| " 23...         | 37.1            | 38.2   | 37.8   | 56     | 60   | 16           | 12   | "                   | "       | 1,014   | "         | "       | "              |
| " 24...         | 37.6            | 38.0   | 38.2   | 52     | 60   | 12           | 12   | "                   | Clear.  | 1,030   | "         | Nil.    | Nil.           |
| " 25...         | 37.8            | 38.0   | 37.8   | 48     | 52   | 12           | 12   | "                   | Turbid. | 1,028   | "         | "       | 1/16           |
| " 26...         | 37.4            | 38.2   | 38.8   | 48     | 60   | 16           | 12   | "                   | Clear.  | 1,022   | "         | "       | Trace.         |
| " 27...         | 37.5            | 38.4   | 38.3   | 52     | 52   | 12           | 12   | "                   | Turbid. | 1,024   | "         | "       | Nil.           |
| " 28...         | 37.8            | 37.8   | 38.4   | 52     | 64   | 12           | 12   | "                   | "       | 1,036   | "         | "       | "              |
| " 29...         | 37.6            | 37.0   | 38.6   | 52     | 56   | 12           | 12   | "                   | "       | 1,040   | "         | Trace.  | Trace.         |
| " 30...         | 37.4            | 39.0   | 40.4   | 48     | 64   | 12           | 16   | Few.                | "       | 1,027   | "         | Nil.    | Nil.           |
| " 31...         | 38.4            | 38.4   | 39.6   | 56     | 64   | 12           | 16   | "                   | Clear.  | 1,022   | "         | "       | "              |
| August 1...     | 38.6            | 38.0   | 39.5   | 72     | 76   | 12           | 16   | "                   | "       | 1,018   | "         | Trace.  | "              |
| " 2...          | 38.4            | 37.8   | 38.0   | 52     | 64   | 12           | 12   | Absent              | "       | 1,022   | "         | Nil.    | Trace.         |
| " 3...          | 37.0            | 37.4   | 37.7   | 48     | 54   | 12           | 9    | "                   | "       | 1,028   | "         | "       | "              |
| " 4...          | 36.8            | 37.4   | 37.8   | 48     | 64   | 12           | 12   | "                   | "       | 1,032   | "         | "       | Nil.           |
| " 5...          | 37.0            | 37.4   | 38.4   | 48     | 64   | 12           | 12   | "                   | Turbid. | 1,010   | "         | "       | Trace.         |
| " 6...          | 37.0            | 37.8   | 38.8   | 52     | 52   | 12           | 16   | "                   | "       | 1,019   | "         | "       | Nil.           |
| " 7...          | 37.6            | 37.8   | 38.4   | 48     | 64   | 12           | 12   | "                   | Clear.  | 1,016   | "         | "       | "              |
| " 8...          | 37.2            | 38.2   | 37.4   | 48     | 56   | 12           | 12   | "                   | Turbid. | 1,020   | "         | "       | "              |
| " 9...          | 37.6            | 38.8   | 38.4   | 44     | 56   | 12           | 12   | "                   | Clear.  | 1,036   | "         | "       | Trace.         |
| " 10...         | 37.4            | 38.6   | 38.8   | 44     | 56   | 12           | 12   | "                   | "       | 1,010   | "         | "       | Nil.           |
| " 11...         | 37.2            | 38.2   | 38.3   | 48     | 52   | 12           | 12   | "                   | Turbid. | 1,052   | "         | "       | "              |
| " 12...         | 37.5            | 38.2   | 38.8   | 48     | 48   | 12           | 16   | "                   | Clear.  | 1,022   | "         | "       | Trace.         |
| " 13...         | 37.7            | 38.0   | 38.2   | 48     | 52   | 12           | 12   | "                   | Turbid. | 1,026   | "         | "       | Nil.           |
| " 14...         | 37.0            | 37.4   | 38.3   | 44     | 56   | 12           | 12   | "                   | "       | 1,024   | "         | "       | "              |
| " 15...         | 37.4            | 38.4   | 38.4   | 52     | 56   | 12           | 12   | "                   | "       | 1,016   | "         | "       | "              |
| " 16...         | 37.4            | 38.1   | 38.2   | 52     | 52   | 12           | 12   | "                   | "       | 1,038   | "         | "       | "              |
| " 17...         | 37.0            | 38.6   | 39.2   | 52     | 56   | 16           | 16   | "                   | "       | 1,016   | "         | "       | "              |
| " 18...         | 37.8            | 38.6   | 38.6   | 40     | 48   | 12           | 10   | "                   | Clear.  | 1,028   | "         | "       | "              |
| " 19...         | 39.6            | 38.8   | 38.8   | 72     | 64   | 16           | 14   | "                   | Turbid. | 1,022   | "         | "       | "              |
| " 20...         | 36.6            | 37.9   | 37.8   | 56     | 60   | 16           | 16   | "                   | Clear.  | 1,016   | "         | "       | "              |
| " 21...         | 37.4            | 38.0   | 38.6   | 46     | 52   | 16           | 16   | "                   | Turbid. | 1,030   | "         | Trace.  | "              |
| " 22...         | 37.6            | 38.2   | 39.8   | 48     | 52   | 12           | 24   | "                   | "       | 1,041   | "         | Nil.    | "              |
| " 23...         | 37.0            | 38.0   | 38.6   | 48     | 60   | 12           | 12   | "                   | "       | 1,034   | "         | Trace.  | Trace.         |
| " 24...         | 37.2            | 37.4   | 38.2   | 52     | 56   | 12           | 16   | "                   | Clear   | 1,020   | "         | "       | 1/6            |
| " 25...         | 38.4            | 38.4   | 38.4   | 52     | 60   | 12           | 16   | "                   | Turbid. | 1,032   | "         | "       | Trace.         |
| " 26...         | 37.7            | 37.8   | 38.4   | 48     | 52   | 12           | 16   | "                   | "       | 1,034   | "         | "       | "              |
| " 27...         | 36.6            | 37.6   | 37.4   | 40     | 52   | 12           | 10   | "                   | Clear   | 1,016   | "         | Nil.    | Nil.           |
| " 28...         | 37.4            | 37.6   | 38.2   | 40     | 48   | 12           | 12   | "                   | "       | 1,028   | "         | Trace.  | "              |
| " 29...         | 38.0            | 38.3   | 38.4   | 52     | 48   | 12           | 12   | "                   | "       | 1,012   | "         | Nil.    | "              |
| " 30...         | 37.6            | 39.6   | 39.6   | 36     | 68   | 12           | 9    | "                   | Turbid. | 1,018   | "         | "       | Trace.         |
| " 31...         | 37.8            | 39.7   | 39.8   | 40     | 48   | 12           | 12   | "                   | "       | 1,038   | "         | Trace.  | "              |
| Sept. 1...      | 37.3            | 38.3   | 38.0   | 48     | 52   | 12           | 12   | "                   | Clear.  | 1,020   | "         | Nil.    | Nil.           |
| " 2...          | 36.8            | 38.4   | 38.2   | 48     | 56   | 12           | 12   | "                   | "       | 1,012   | "         | "       | "              |
| " 3...          | 37.4            | 37.2   | 37.8   | 48     | 52   | 16           | 16   | "                   | Turbid. | 1,036   | "         | "       | "              |
| " 4...          | 36.4            | 38.1   | 37.4   | 48     | 56   | 12           | 12   | "                   | Clear.  | 1,022   | "         | Trace.  | Trace.         |
| " 5...          | 37.4            | 37.8   | 40.0   | 40     | 68   | 12           | 12   | "                   | Turbid. | 1,032   | "         | "       | "              |
| " 6...          | 38.0            | 39.0   | 39.8   | 39     | 60   | 12           | 16   | "                   | "       | 1,044   | "         | "       | 1/12           |

| Month and Date. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Urine.  |         |           |          |                |
|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|---------|---------|-----------|----------|----------------|
|                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | Colour. | Sp. Gr. | Reaction. | Albumen. | Hippuric Acid. |
| 1894.           |                 |        |        |        |      |              |      |                     |         |         |           |          |                |
| Sept. 7...      | 37.6            | 38.3   | 38.0   | 44     | 48   | 12           | 12   | Absent.             | Clear.  | 1,034   | Alkaline. | Nil.     | Nil.           |
| " 8...          | 37.6            | 38.2   | 37.9   | 52     | 59   | 12           | 12   | "                   | Turbid. | 1,030   | "         | Trace.   | Trace.         |
| " 9...          | 38.4            | 38.8   | 38.2   | 60     | 60   | 12           | 12   | "                   | Clear.  | 1,012   | "         | Nil.     | "              |
| " 10...         | 37.0            | 39.9   | 37.5   | 60     | 72   | 12           | 16   | "                   | "       | 1,034   | "         | Trace.   | Trace.         |
| " 11...         | 38.4            | 38.6   | 40.1   | 64     | 68   | 16           | 48   | "                   | "       | 1,024   | "         | "        | Nil.           |
| " 12...         | 38.4            | 39.3   | 39.7   | 68     | 68   | 16           | 32   | "                   | "       | 1,038   | "         | Nil.     | 1/10           |
| " 13...         | 38.3            | 38.1   | 38.8   | 78     | 68   | 16           | 16   | "                   | "       | 1,028   | "         | Trace.   | Nil.           |
| " 14...         | 38.4            | 39.4   | 38.8   | 70     | 52   | 12           | 16   | "                   | "       | 1,020   | "         | Nil.     | 1/18           |
| " 15...         | 38.4            | 38.1   | 38.6   | 48     | 56   | 16           | 24   | "                   | Clear.  | 1,044   | "         | "        | 1/6            |
| " 16...         | 38.4            | 39.2   | 38.2   | 60     | 72   | 20           | 16   | "                   | "       | 1,037   | "         | "        | 1/6            |
| " 17...         | 38.1            | 39.0   | 38.8   | 44     | 72   | 12           | 12   | "                   | "       | 1,018   | "         | Trace.   | Nil.           |
| " 18...         | 39.0            | 39.0   | 39.5   | 56     | 78   | 20           | 20   | "                   | "       | 1,010   | "         | Nil.     | "              |
| " 19...         | 38.6            | 38.6   | 38.4   | 68     | 80   | 16           | 12   | "                   | "       | 1,026   | "         | Trace.   | "              |
| " 20...         | 39.0            | 39.4   | 39.6   | 72     | 84   | 20           | 24   | "                   | "       | 1,024   | "         | Nil.     | 1/12           |
| " 21...         | 39.0            | 39.3   | 39.6   | 72     | 56   | 16           | 20   | "                   | "       | 1,022   | "         | 1/26     | Nil.           |
| " 22...         | 38.5            | 38.8   | 38.6   | 64     | 60   | 20           | 20   | "                   | "       | 1,011   | "         | Nil.     | 1/12           |
| " 23...         | 38.6            | 39.0   | 39.2   | 64     | 56   | 16           | 20   | "                   | "       | 1,028   | Acid.     | Trace.   | 1/10           |
| " 24...         | 38.8            | 38.6   | 39.0   | 68     | 60   | 20           | 24   | "                   | "       | 1,012   | Alkaline. | "        | Trace.         |
| " 25...         | 38.8            | 38.8   | 39.0   | 60     | 68   | 20           | 20   | "                   | "       | 1,034   | Neutral.  | Trace.   | 1/10           |
| " 26...         | 38.6            | 38.4   | 38.6   | 64     | 64   | 16           | 16   | "                   | "       | 1,032   | Alkaline  | "        | 1/8            |
| " 27...         | 39.1            | 39.0   | 38.2   | 68     | 64   | 24           | 20   | "                   | "       | 1,032   | "         | "        | Nil.           |

8 A.M.—Animal appeared in normal health, at 5 P.M. symptoms of acute diarrhœa developed, accompanied with discharges of mucus from mouth and nostrils. The evacuations became exceedingly watery, and contained some blood and mucus. Numerous dumb-bell shaped crystals soluble in Acetic Acid without effervescence were discovered on microscopical examination of the evacuation.

28... 38.0 38.4 38.4 60 60 28 44 Absent. Clear. 1,012 Alkaline. Trace. Nil.

8. A.M.—The animal is much weaker, restless, and apparently suffering from abdominal pains. The extremities are cold. The glairy discharge from the nostrils and mouth has increased in quantity, and the evacuations are more watery. At 2 P.M. the animal was too weak to stand, it lay down first flat on its side, and on attempting to stand the hind limbs refused to support its weight and it rolled over again. The cornæ became glazed and opaque and at 8 P.M. the animal died.

REMARKS.

The chief point of interest in this case is that the length of the latent period after the primary inoculation with soiled blood derived from the rat occupied only 62 hours; whereas after re-inoculation with soiled Horse Surra blood the incubative period was prolonged to 48 days. This points to the fact that probably the blood of the Bull contained some antitoxic product, the effect of the first inoculation, which deterred the development of the hæmatozoon of Horse Surra until after the product had been eliminated from the system of the animal.

DONKEY No. II.

Aged. Apparently healthy, and in good condition.

| Date.   | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |       | Hæmatozoa in Blood. | Urine.  |         |           |          |
|---------|-----------------|-----------------|--------|--------|--------|------|--------------|-------|---------------------|---------|---------|-----------|----------|
|         |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M.  |                     | Colour. | Sp. Gr. | Reaction. | Albumen. |
| 1892.   |                 |                 |        |        |        |      |              |       |                     |         |         |           |          |
| July 28 | ...             | ...             | ...    | 39.3   | ...    | ...  | ...          | ...   | Healthy             | Turbid  | 1,038   | Alkaline. | Nil.     |
| " 29    | ...             | ...             | 36.4   | ...    | 38.0   | 32   | ...          | 8     | "                   | "       | 1,036   | "         | "        |
| " 30    | ...             | ...             | 37.4   | 37.6   | 38.0   | 40   | 40           | 12 16 | "                   | "       | 1,032   | "         | "        |
| " 31    | ...             | ...             | 36.7   | 39.3   | 39.3   | 40   | 44           | 16 17 | "                   | Clear   | 1,034   | "         | "        |

The animal was inoculated subcutaneously at the root of the neck on the left side with 1 c. c. of blood containing very numerous hæmatozoa drawn from the jugular vein of Horse LXVII (the latter having been inoculated from Horse LXII).

August 1 ... 37.2 39.0 39.1 40 40 12 14 Absent ... Turbid 1,035 " "

No change at the seat of inoculation.

" 2 ... 37.6 38.0 39.0 48 48 13 12 " ... 1,036 " "

There is a small swelling  $\frac{1}{2}$ "  $\times$   $\frac{1}{4}$ " at the seat of inoculation.

" 3 ... 37.6 39.1 39.1 48 48 28 18 " ... 1,039 " "

" 4 ... 1 38.0 39.2 39.2 50 48 18 16 Few ... 1,040 Strongly Alkaline. "

" 5 ... 2 40.3 41.0 41.0 51 60 25 18 Numerous. " 1,036 " "

The animal walks with an unsteady gait but otherwise appears healthy; a few small petechiæ on the membrana nictitantes.



| Date.  | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | URINE.    |         |                    |          |
|--|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|-----------|---------|--------------------|----------|
|  |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | Colour.   | Sp. Gr. | Reaction.          | Albumen. |
| 1892.<br>August 6 ...  | 3               | 40.8            | 41.4   | 41.0   | 66     | 64   | 21           | 24   | Swarming.           | Turbid.   | 1,036   | Strongly Alkaline. | Nil.     |
| The animal is dull, there is some loss of appetite, and the pulse is frequent and weak.  |                 |                 |        |        |        |      |              |      |                     |           |         |                    |          |
| " 7 ...  | 4               | 41.0            | 41.0   | 41.1   | 72     | 72   | 15           | 28   | " ...               | " ...     | 1,034   | "                  | "        |
| Animal brighter, appetite good. Some slight swelling round the fetlocks. The visible mucous membranes are pale and of a dirty grey colour. The petechiæ are fading.                                    |                 |                 |        |        |        |      |              |      |                     |           |         |                    |          |
| " 8 ...  | 5               | 40.3            | 40.4   | 40.7   | 64     | 60   | 18           | 20   | Numerous.           | Clear ... | 1,030   | Alkaline.          | "        |
| " 9 ...  | 6               | 39.3            | 40.3   | 40.2   | 64     | 64   | 16           | 18   | Absent ...          | Turbid.   | 1,030   | "                  | "        |
| Several small fresh petechiæ on the membranæ nictitantes. The swelling at the seat of inoculation is now 1" x 1/3" surrounded by a certain amount of œdema. There is also slight œdema of the serotum. |                 |                 |        |        |        |      |              |      |                     |           |         |                    |          |
| " 10 ...   | 7               | 39.3            | 39.3   | 40.4   | 60     | 60   | 14           | 16   | " ...               | " ...     | 1,028   | Strongly Alkaline. | "        |
| The animal is much stronger and the swelling at seat of inoculation is only just perceptible.  |                 |                 |        |        |        |      |              |      |                     |           |         |                    |          |
| " 11 ...   | 8               | 39.3            | 39.3   | 40.1   | 47     | 60   | 13           | 20   | Few ...             | " ...     | 1,036   | Alkaline.          | "        |
| " 12 ...   | 9               | 39.3            | 40.1   | 40.3   | 48     | 60   | 20           | 24   | " ...               | " ...     | 1,026   | "                  | "        |
| The swelling of the hind limbs has disappeared.  |                 |                 |        |        |        |      |              |      |                     |           |         |                    |          |
| " 13 ...   | 10              | 40.3            | 39.7   | 40.7   | 52     | 60   | 28           | 28   | " ...               | " ...     | 1,024   | "                  | "        |
| " 14 ...   | 11              | 39.3            | 40.2   | 40.5   | 60     | 68   | 18           | 24   | " ...               | " ...     | 1,030   | "                  | "        |
| " 15 ...   | 12              | 39.3            | 40.1   | 40.3   | 60     | 68   | 24           | 28   | " ...               | " ...     | 1,028   | Strongly Alkaline. | "        |
| " 16 ...   | 13              | 39.3            | 40.3   | 40.8   | 60     | 64   | 24           | 28   | Very numerous.      | " ...     | 1,034   | "                  | "        |
| A few conjunctival petechiæ.   |                 |                 |        |        |        |      |              |      |                     |           |         |                    |          |
| " 17 ...   | 14              | 41.2            | 41.1   | 41.0   | 68     | 74   | 28           | 24   | Numerous.           | " ...     | 1,024   | Alkaline.          | "        |
| " 18 ...   | 15              | 40.2            | 40.7   | 40.8   | 60     | 60   | 36           | 24   | Absent ...          | Clear ... | 1,022   | "                  | "        |
| There is some fluid in the left tunica vaginalis.  |                 |                 |        |        |        |      |              |      |                     |           |         |                    |          |
| " 19 ...   | 16              | 40.3            | 40.4   | 40.0   | 60     | 60   | 24           | 40   | " ...               | " ...     | 1,028   | "                  | "        |
| The sclerotics are tinged light yellow. The fluid has disappeared from the left tunica vaginalis.  |                 |                 |        |        |        |      |              |      |                     |           |         |                    |          |
| " 20 ...   | 17              | 40.0            | 40.3   | 40.0   | 44     | 52   | 24           | 20   | Few ...             | " ...     | 1,024   | "                  | "        |
| " 21 ...   | 18              | 39.3            | 39.3   | 40.1   | 60     | 60   | 21           | 20   | " ...               | Turbid.   | 1,026   | "                  | "        |
| " 22 ...   | 19              | 39.3            | 40.3   | 40.3   | 48     | 52   | 21           | 26   | Very numerous.      | " ...     | 1,030   | "                  | "        |
| " 23 ...   | 20              | 40.7            | 41.2   | 41.2   | 72     | 78   | 31           | 36   | Numerous.           | " ...     | 1,024   | "                  | Trace.   |
| Animal is dull, and is losing strength and condition. The pulse is hard, quick and frequent, and the heart's beat irritable.   |                 |                 |        |        |        |      |              |      |                     |           |         |                    |          |
| " 24 ...   | 21              | 40.4            | 40.8   | 40.0   | 72     | 64   | 20           | 16   | Few ...             | Clear     | 1,023   | Alkaline.          | "        |
| The sheath is somewhat swollen and œdematous.  |                 |                 |        |        |        |      |              |      |                     |           |         |                    |          |
| " 25 ...   | 22              | 39.3            | 39.3   | 40.0   | 45     | 48   | 17           | 16   | Absent ...          | Turbid.   | 1,022   | Strongly Alkaline. | "        |
| The animal has a slight catarrh of the respiratory passages. The œdema of the sheath has disappeared.  |                 |                 |        |        |        |      |              |      |                     |           |         |                    |          |
| " 26 ...   | 23              | 39.3            | 40.1   | 40.2   | 60     | 56   | 18           | 20   | " ...               | " ...     | 1,023   | Alkaline.          | "        |
| The animal has a tendency to fall to the left side when it walks.  |                 |                 |        |        |        |      |              |      |                     |           |         |                    |          |
| " 27 ...   | 24              | 39.3            | 40.1   | 39.3   | 48     | 56   | 20           | 24   | Numerous.           | " ...     | 1,026   | "                  | "        |
| " 28 ...   | 25              | 40.7            | 40.1   | 41.2   | 60     | 64   | 24           | 24   | Very numerous.      | " ...     | 1,024   | "                  | "        |
| " 29 ...   | 26              | 40.0            | 41.3   | 40.2   | 60     | 60   | 20           | 12   | Few ...             | " ...     | 1,010   | "                  | "        |
| " 30 ...   | 27              | 39.3            | 39.7   | 39.2   | 60     | 48   | 16           | 28   | Absent ...          | " ...     | 1,018   | "                  | "        |
| " 31 ...   | 28              | 38.0            | 39.3   | 39.3   | 48     | 48   | 15           | 20   | Few ...             | " ...     | 1,025   | "                  | "        |
| September 1 ...  | 29              | 39.1            | 39.3   | 39.3   | 52     | 60   | 16           | 20   | Numerous.           | " ...     | 1,018   | "                  | "        |
| " 2 ...  | 30              | 40.8            | 41.1   | 41.1   | 56     | 64   | 20           | 20   | Very numerous.      | " ...     | 1,020   | "                  | "        |
| " 3 ...  | 31              | 41.2            | 40.8   | 40.7   | 72     | 68   | 20           | 20   | Few ...             | " ...     | 1,020   | "                  | "        |
| " 4 ...  | 32              | 39.3            | 39.3   | 39.6   | 60     | 68   | 20           | 20   | Absent ...          | " ...     | 1,016   | "                  | "        |
| " 5 ...  | 33              | 38.0            | 39.3   | 39.3   | 60     | 48   | 20           | 16   | " ...               | " ...     | 1,016   | "                  | "        |
| Animal appears brighter and walks with a firmer gait.</  |                 |                 |        |        |        |      |              |      |                     |           |         |                    |          |

| Date.   | Day of Disease. | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | URINE.         |         |           |             |        |
|---|-----------------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------------|---------|-----------|-------------|--------|
|   |                 | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | Colour.        | Sp. Gr. | Reaction. | Albumen.    |        |
| 1892.   |                 |                 |        |        |        |      |              |      |                     |                |         |           |             |        |
| September   | 12 ...          | 40              | 38.0   | 39.3   | 41.3   | 67   | 68           | 24   | 24                  | Absent ...     | Turbid  | 1,040     | Alkaline... | Trace. |
| "   | 13 ...          | 41              | 38.7   | 40.2   | 39.3   | 64   | 68           | 14   | 28                  | Few ...        | "       | 1,032     | "           | Nil.   |
| "   | 14 ...          | 42              | 38.0   | 39.3   | 40.4   | 54   | 64           | 20   | 36                  | Numerous.      | "       | 1,024     | "           | "      |
| "   | 15 ...          | 43              | 39.3   | 41.2   | 41.6   | 60   | 60           | 24   | 48                  | "              | "       | 1,024     | "           | Trace. |
| Slight œdema around the fetlocks.   |                 |                 |        |        |        |      |              |      |                     |                |         |           |             |        |
| "   | 16 ...          | 44              | 40.1   | 40.2   | 40.3   | 64   | 80           | 20   | 24                  | Very numerous. | "       | 1,020     | "           | 1/15   |
| "   | 17 ...          | 45              | 39.6   | 40.2   | 39.3   | 68   | 60           | 16   | 24                  | Absent ...     | "       | 1,026     | "           | 1/50   |
| "   | 18 ...          | 46              | 37.6   | 38.0   | 39.6   | 44   | 56           | 16   | 28                  | "              | "       | 1,026     | "           | Trace. |
| "   | 19 ...          | 47              | 38.0   | 39.3   | 39.3   | 56   | 60           | 16   | 16                  | Few ...        | "       | 1,037     | "           | "      |
| "   | 20 ...          | 48              | 39.3   | 40.2   | 40.3   | 52   | 64           | 20   | 24                  | Numerous.      | "       | 1,020     | "           | Nil.   |
| "   | 21 ...          | 49              | 40.8   | 42.0   | 41.1   | 64   | 64           | 24   | 30                  | Swarming.      | "       | 1,019     | "           | Trace. |
| Slight œdema of the hind limbs below the hocks, the swelling is neither hot nor painful.                |                 |                 |        |        |        |      |              |      |                     |                |         |           |             |        |
| "   | 22 ...          | 50              | 40.1   | 40.2   | 40.2   | 64   | 64           | 20   | 24                  | Very numerous. | "       | 1,012     | "           | Nil.   |
| "   | 23 ...          | 51              | 40.2   | 40.3   | 40.0   | 60   | 64           | 20   | 28                  | Absent ...     | Clear   | 1,044     | "           | "      |
| "   | 24 ...          | 52              | 38.0   | 40.2   | 40.3   | 60   | 84           | 20   | 28                  | "              | Turbid  | 1,014     | "           | "      |
| The right side of the face is swollen, due to the deposit of semi-solid gelatinous material.            |                 |                 |        |        |        |      |              |      |                     |                |         |           |             |        |
| "   | 25 ...          | 53              | 39.3   | 39.3   | 39.3   | 60   | 60           | 16   | 28                  | "              | "       | 1,032     | "           | "      |
| The swelling of the face has increased, and now involves the subcutaneous tissues of the nose.          |                 |                 |        |        |        |      |              |      |                     |                |         |           |             |        |
| "   | 26 ...          | 54              | 39.3   | 40.3   | 40.3   | 60   | 60           | 10   | 12                  | "              | "       | 1,030     | "           | "      |
| There is œdema of right conjunctiva, completely closing the lid.  |                 |                 |        |        |        |      |              |      |                     |                |         |           |             |        |
| "   | 27 ...          | 55              | 40.0   | 40.7   | 40.6   | 64   | 52           | 40   | 24                  | Few ...        | "       | 1,028     | "           | Trace. |
| "   | 28 ...          | 56              | 40.1   | 40.7   | 40.8   | 48   | 80           | 16   | 24                  | Very numerous. | "       | 1,024     | "           | "      |
| The œdema has disappeared from the right eye.   |                 |                 |        |        |        |      |              |      |                     |                |         |           |             |        |
| "   | 29 ...          | 57              | 39.3   | 40.1   | 40.2   | 56   | 72           | 16   | 24                  | Absent ...     | "       | 1,028     | "           | "      |
| "   | 30 ...          | 58              | 39.3   | 39.3   | 39.3   | 60   | 60           | 16   | 24                  | Few ...        | "       | 1,026     | "           | 1/18   |
| October   | 1 ...           | 59              | 37.6   | 38.0   | 39.3   | 60   | 48           | 12   | 16                  | Absent ...     | "       | 1,026     | "           | 1/8    |
| "   | 2 ...           | 60              | 39.3   | 39.3   | 39.3   | 52   | 56           | 16   | 16                  | Few ...        | "       | 1,024     | "           | 1/16   |
| The animal continues to lose flesh.   |                 |                 |        |        |        |      |              |      |                     |                |         |           |             |        |
| "   | 3 ...           | 61              | 39.3   | 41.2   | 41.2   | 60   | 64           | 12   | 20                  | Swarming.      | "       | 1,028     | "           | Trace. |
| "   | 4 ...           | 62              | 40.8   | 40.3   | 40.5   | 76   | 60           | 20   | 40                  | Few ...        | "       | 1,026     | "           | 1/13   |
| "   | 5 ...           | 63              | 40.3   | 40.3   | 39.3   | 64   | 60           | 16   | 32                  | Absent ...     | "       | 1,014     | "           | Trace. |
| "   | 6 ...           | 64              | 38.0   | 39.3   | 39.3   | 52   | 56           | 24   | 32                  | "              | "       | 1,006     | "           | Nil.   |
| "   | 7 ...           | 65              | 39.3   | 38.6   | 39.2   | 56   | 60           | 20   | 20                  | Few ...        | "       | 1,030     | "           | "      |
| "   | 8 ...           | 66              | 37.4   | 38.8   | 38.4   | 52   | 64           | 20   | 36                  | "              | "       | 1,042     | "           | 1/30   |
| "   | 9 ...           | 67              | 39.0   | 38.6   | 39.2   | 72   | 64           | 40   | 32                  | Numerous.      | "       | 1,036     | "           | 1/20   |
| "   | 10 ...          | 68              | 39.3   | 40.6   | 41.0   | 60   | 60           | 20   | 35                  | Swarming.      | "       | 1,032     | "           | 1/30   |
| "   | 11 ...          | 69              | 40.7   | 40.7   | 40.5   | 76   | 64           | 16   | 24                  | "              | "       | 1,032     | "           | 1/26   |
| "   | 12 ...          | 70              | 38.5   | 39.3   | 39.2   | 56   | 52           | 24   | 20                  | Absent ...     | "       | 1,036     | "           | 1/30   |
| "   | 13 ...          | 71              | 37.7   | 38.2   | 38.2   | 48   | 52           | 20   | 20                  | "              | "       | 1,034     | "           | 1/19   |
| "   | 14 ...          | 72              | 38.0   | 38.2   | 38.5   | 44   | 48           | 20   | 20                  | "              | "       | 1,040     | "           | Trace. |
| "   | 15 ...          | 73              | 37.5   | 38.3   | 39.2   | 52   | 84           | 12   | 32                  | "              | "       | 1,040     | "           | 1/28   |
| "   | 16 ...          | 74              | 38.0   | 38.2   | 39.3   | 56   | 64           | 20   | 48                  | "              | "       | 1,032     | "           | 1/23   |
| "   | 17 ...          | 75              | 38.5   | 40.0   | 39.8   | 64   | 68           | 16   | 20                  | Few ...        | "       | 1,034     | "           | 1/30   |
| "   | 18 ...          | 76              | 39.4   | 39.7   | 39.5   | 64   | 64           | 20   | 40                  | Very numerous. | "       | 1,028     | "           | 1/32   |
| "   | 19 ...          | 77              | 40.0   | 40.6   | 40.6   | 64   | 76           | 24   | 32                  | "              | "       | 1,026     | "           | 1/25   |
| "   | 20 ...          | 78              | 39.0   | 39.2   | 39.0   | 68   | 64           | 16   | 12                  | Absent ...     | "       | 1,034     | "           | 1/16   |
| "   | 21 ...          | 79              | 38.4   | 38.0   | 38.0   | 60   | 52           | 20   | 28                  | "              | "       | 1,022     | "           | 1/28   |
| "   | 22 ...          | 80              | 37.4   | 38.0   | 38.2   | 52   | 56           | 20   | 20                  | "              | "       | 1,036     | "           | 1/34   |
| "   | 23 ...          | 81              | 37.7   | 38.1   | 38.4   | 52   | 64           | 16   | 16                  | "              | "       | 1,044     | "           | Nil.   |
| "   | 24 ...          | 82              | 38.1   | 38.7   | 39.2   | 60   | 64           | 16   | 28                  | "              | "       | 1,016     | "           | "      |
| The animal appears to get stronger; this probably being due to the longer duration of the intermission. |                 |                 |        |        |        |      |              |      |                     |                |         |           |             |        |
| "   | 25 ...          | 83              | 38.8   | 39.0   | 39.1   | 64   | 64           | 24   | 20                  | Few ...        | Turbid  | 1,024     | "           | 1/23   |
| "   | 26 ...          | 84              | 38.2   | 39.2   | 39.4   | 64   | 64           | 20   | 24                  | Numerous.      | "       | 1,024     | "           | 1/25   |
| "   | 27 ...          | 85              | 40.0   | 40.8   | 41.4   | 64   | 51           | 20   | 24                  | Absent ...     | "       | 1,026     | "           | 1/23   |
| "   | 28 ...          | 86              | 39.5   | 40.6   | 40.2   | 80   | 74           | 20   | 20                  | "              | Clear   | 1,016     | "           | 1/27   |
| "   | 29 ...          | 87              | 38.7   | 38.7   | 38.6   | 69   | 64           | 20   | 24                  | "              | Turbid  | 1,032     | "           | 1/25   |
| "   | 30 ...          | 88              | 39.7   | 40.0   | 38.7   | 64   | 72           | 20   | 24                  | "              | "       | 1,030     | "           | 1/22   |
| "   | 31 ...          | 89              | 38.2   | 38.3   | 38.8   | 64   | 64           | 20   | 24                  | "              | "       | 1,026     | "           | 1/32   |
| November  | 1 ...           | 90              | 39.4   | 39.5   | 39.3   | 64   | 64           | 20   | 20                  | Few ...        | "       | 1,020     | "           | 1/16   |
| "   | 2 ...           | 91              | 38.4   | 39.7   | 39.6   | 60   | 64           | 16   | 20                  | "              | "       | 1,028     | "           | 1/18   |
| "   | 3 ...           | 92              | 39.1   | 39.4   | 39.6   | 64   | 64           | 20   | 20                  | "              | "       | 1,032     | "           | 1/15   |
| "   | 4 ...           | 93              | 40.2   | 40.7   | 41.2   | 64   | 68           | 16   | 20                  | Numerous.      | "       | 1,026     | "           | 1/12   |



## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Donkey \_\_\_\_\_ Age, Aged \_\_\_\_\_ Sex, Entire. \_\_\_\_\_ Colour, \_\_\_\_\_

Sex, Entire.

Age, Aged.

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Date of Result, 25.12.92 Register No II

Result, Death.

July. 1892.

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Date of inoculation

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use, Surra

## Disco

[illegible]

(5.415)

Haematocrit Curve  
Temperature.....

Drawn & Litho: Govt Photodupl. Office, Poona 1893.

Pulse .....  
Respiration .....

X Inoculated with 1.0cc of blood containing very numerous hematozoa, taken from the Jugular Vein of Horse N.º I.XV.VII.











Donkey

Disease,

Age,

Sex,

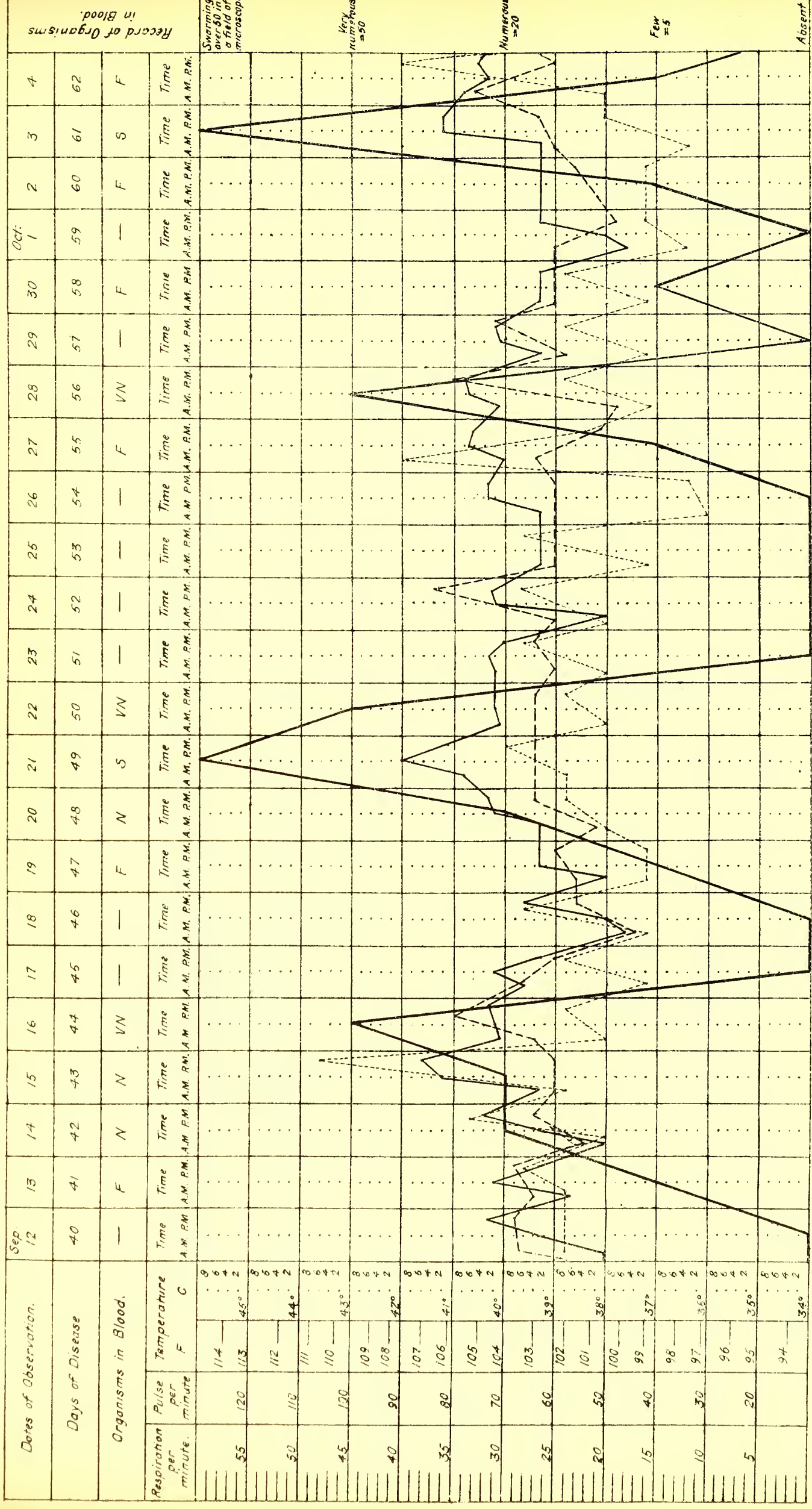
Colour,

Date of

Result,

Date of Result,

Register No. II



Haematozoan Curve

Temperature

Pulse

Respiration

Drawn & Litho: Govt Photodupl. Office, Poona 1893.

(5.415)



Donkey

Disease,

Age,

Sex,

Colour,

Result,

Date of Result,

Register No. II

| Dates of Observation   |                  | Oct. 5        | 6             | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   |
|------------------------|------------------|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Days of Disease        |                  | 63            | 64            | 65   | 66   | 67   | 68   | 69   | 70   | 71   | 72   | 73   | 74   | 75   | 76   | 77   | 78   | 79   | 80   | 81   | 82   | 83   | 84   | 85   |
| Organisms in Blood.    |                  | —             | —             | F    | F    | N    | S    | S    | —    | —    | —    | —    | —    | F    | VN   | VN   | —    | —    | —    | —    | —    | F    | N    | —    |
| Respiration per minute | Pulse per minute | Temperature F | Temperature C | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |
| 55                     | 120              | 114           | 45°           | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. |
| 50                     | 110              | 112           | 44°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 45                     | 100              | 110           | 43°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 40                     | 90               | 109           | 42°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 35                     | 80               | 107           | 41°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 30                     | 70               | 105           | 40°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 25                     | 60               | 103           | 39°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 20                     | 50               | 101           | 38°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 15                     | 40               | 99            | 37°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 10                     | 30               | 97            | 36°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 5                      | 20               | 95            | 35°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 94            | 34°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Record of Organisms in Blood.

Swarming over 50 in a field of microscope

Very numerous = 50

Numerous = 25

Few = 5

Absent

(5.415)

Haematocrit Curve  
Temperature.....

Pulse.....  
Respiration.....

Drann & Litho. Govt. Photodup. Office, Poona 1893.





## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

Donkey \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_ Colour \_\_\_\_\_  
 Disease \_\_\_\_\_ Date of \_\_\_\_\_ Result \_\_\_\_\_ Register No. II \_\_\_\_\_

[illegible]

(5.415)

Drawn & Litho: Govt Photodupl. Office, Poona 1893.

Haematocrit Curve  
Temperature . . . . .

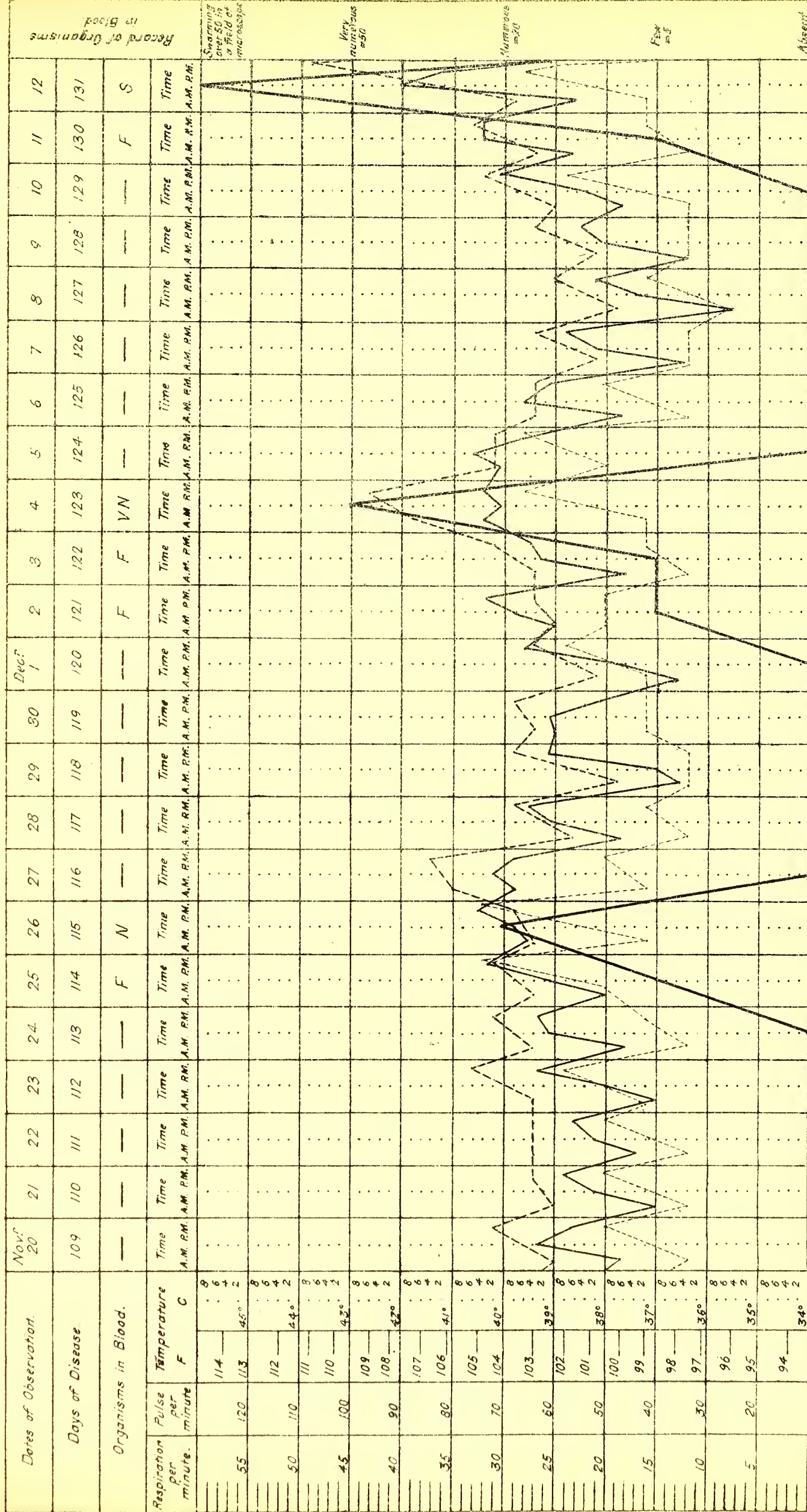
Pulse, .... - - - - -  
Respiration - - - - -





RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Donkey                      Age,              Sex,              Colour,               
Disease,                      Date of              Result,              Date of Result,              Register No.             











| Date.    |        | Day of Disease. | Temperature °C. |         |         | Pulse. |       | Respiration. |       | Hæmatozoa in Blood. | Urine.  |         |           |         |
|----------|--------|-----------------|-----------------|---------|---------|--------|-------|--------------|-------|---------------------|---------|---------|-----------|---------|
|          |        |                 | A. M.           | 1 P. M. | 5 P. M. | A. M.  | P. M. | A. M.        | P. M. |                     | Colour. | Sp. Gr. | Reaction. | Albumen |
| 1892.    |        |                 |                 |         |         |        |       |              |       |                     |         |         |           |         |
| November | 5 ...  | 94              | 38·7            | 40·1    | 40·6    | 72     | 60    | 20           | 33    | Absent.             | Turbid. | 1,020   | Alkaline. | 1/10    |
| „        | 6 ...  | 95              | 38·7            | 38·7    | 38·2    | 72     | 60    | 20           | 16    | „                   | „       | 1,022   | „         | 1/12    |
| „        | 7 ...  | 96              | 38·1            | 38·4    | 38·5    | 56     | 64    | 16           | 20    | „                   | „       | 1,022   | „         | 1/38    |
| „        | 8 ...  | 97              | 38·4            | 38·7    | 38·7    | 64     | 60    | 20           | 24    | „                   | „       | 1,030   | „         | 1/33    |
| „        | 9 ...  | 98              | 38·4            | 39·7    | 40·2    | 64     | 68    | 20           | 16    | „                   | „       | 1,030   | „         | 1/32    |
| „        | 10 ... | 99              | 38·4            | 39·5    | 40·2    | 64     | 68    | 12           | 16    | „                   | „       | 1,022   | „         | 1/13    |
| „        | 11 ... | 100             | 38·6            | 39·7    | 40·5    | 64     | 64    | 12           | 12    | „                   | „       | 1,028   | „         | 1/12    |

Two guinea pigs were each inoculated with 0.3 c. c. of blood taken from this animal.

|   |        |     |      |      |      |    |    |    |    |           |   |       |   |      |
|---|--------|-----|------|------|------|----|----|----|----|-----------|---|-------|---|------|
| " | 12 ... | 101 | 38.0 | 39.1 | 38.8 | 60 | 68 | 12 | 24 | "         | " | 1,034 | " | 1/11 |
| " | 13 ... | 102 | 38.2 | 38.8 | 39.0 | 68 | 64 | 20 | 20 | "         | " | 1,024 | " | 1/32 |
| " | 14 ... | 103 | 37.1 | 38.6 | 39.2 | 64 | 68 | 12 | 28 | "         | " | 1,026 | " | 1/28 |
| " | 15 ... | 104 | 37.0 | 38.0 | 39.1 | 60 | 64 | 16 | 16 | Few.      | " | 1,030 | " | 1/26 |
| " | 16 ... | 105 | 37.3 | 39.7 | 39.4 | 60 | 72 | 12 | 20 | "         | " | 1,034 | " | 1/30 |
| " | 17 ... | 106 | 38.7 | 38.8 | 40.1 | 68 | 64 | 12 | 16 | "         | " | 1,018 | " | 1/36 |
| " | 18 ... | 107 | 38.7 | 39.0 | 39.4 | 60 | 64 | 12 | 20 | Numerous. | " | 1,025 | " | 1/11 |
| " | 19 ... | 108 | 38.4 | 39.0 | 39.5 | 64 | 64 | 12 | 16 | Absent.   | " | 1,023 | " | 1/15 |
| " | 20 ... | 109 | 37.7 | 39.3 | 38.7 | 60 | 72 | 12 | 20 | "         | " | 1,020 | " | 1/16 |
| " | 21 ... | 110 | 37.0 | 38.2 | 38.8 | 60 | 64 | 12 | 20 | "         | " | 1,026 | " | 1/11 |
| " | 22 ... | 111 | 37.4 | 38.2 | 38.6 | 64 | 64 | 12 | 20 | "         | " | 1,036 | " | 1/9  |
| " | 23 ... | 112 | 37.0 | 38.0 | 39.3 | 64 | 76 | 16 | 24 | "         | " | 1,020 | " | 1/16 |

The hæmatozoon appeared in the blood of each of the guinea pigs inoculated on the 11th instant.

|          |        |     |      |      |      |    |    |    |    |                |   |       |   |      |
|----------|--------|-----|------|------|------|----|----|----|----|----------------|---|-------|---|------|
| "        | 24 ... | 113 | 37.6 | 39.1 | 39.3 | 64 | 72 | 12 | 16 | "              | " | 1,022 | " | 1/10 |
| "        | 25 ... | 114 | 38.0 | 39.1 | 40.3 | 64 | 72 | 20 | 34 | Few.           | " | 1,028 | " | 1/7  |
| "        | 26 ... | 115 | 39.5 | 39.8 | 40.5 | 64 | 68 | 16 | 32 | Numerous.      | " | 1,018 | " | 1/13 |
| "        | 27 ... | 116 | 39.8 | 40.2 | 39.8 | 80 | 84 | 16 | 20 | Absent.        | " | 1,020 | " | 1/9  |
| "        | 28 ... | 117 | 37.7 | 39.1 | 39.5 | 56 | 68 | 12 | 16 | "              | " | 1,024 | " | 1/9  |
| "        | 29 ... | 118 | 36.6 | 37.0 | 39.1 | 48 | 68 | 12 | 12 | "              | " | 1,032 | " | 1/8  |
| "        | 30 ... | 119 | 39.0 | 39.1 | 38.1 | 64 | 68 | 16 | 16 | "              | " | 1,036 | " | 1/8  |
| December | 1 ...  | 120 | 36.6 | 37.7 | 39.6 | 52 | 64 | 16 | 24 | "              | " | 1,032 | " | 1/8  |
| "        | 2 ...  | 121 | 39.0 | 39.8 | 40.4 | 60 | 64 | 20 | 20 | Few.           | " | 1,032 | " | 1/11 |
| "        | 3 ...  | 122 | 37.6 | 39.3 | 39.5 | 64 | 72 | 12 | 16 | "              | " | 1,024 | " | 1/8  |
| "        | 4 ...  | 123 | 40.4 | 40.1 | 40.4 | 88 | 96 | 16 | 28 | Very numerous. | " | 1,024 | " | 1/21 |
| "        | 5 ...  | 124 | 40.1 | 40.6 | 39.7 | 72 | 72 | 20 | 28 | Absent.        | " | 1,020 | " | 1/7  |
| "        | 6 ...  | 125 | 37.7 | 39.6 | 39.1 | 64 | 64 | 12 | 20 | "              | " | 1,022 | " | 1/12 |
| "        | 7 ...  | 126 | 36.5 | 38.2 | 38.8 | 52 | 64 | 12 | 12 | "              | " | 1,028 | " | 1/15 |
| "        | 8 ...  | 127 | 35.5 | 37.3 | 38.2 | 48 | 60 | 8  | 16 | "              | " | 1,026 | " | 1/18 |

No difference is observable whether the temperature of the animal is 42° C or 35.5° C. as registered this morning; its gait is firm and appetite unchanged.

|   |        |     |      |      |      |    |     |    |    |                |   |       |   |      |
|---|--------|-----|------|------|------|----|-----|----|----|----------------|---|-------|---|------|
| " | 9 ...  | 128 | 36.4 | 38.1 | 38.5 | 52 | 64  | 12 | 12 | "              | " | 1,020 | " | 1/12 |
| " | 10 ... | 129 | 37.7 | 38.4 | 40.1 | 60 | 76  | 12 | 24 | "              | " | 1,046 | " | 1/12 |
| " | 11 ... | 130 | 38.7 | 40.4 | 40.4 | 64 | 76  | 12 | 16 | Few.           | " | 1,032 | " | 1/18 |
| " | 12 ... | 131 | 38.6 | 42.0 | 41.2 | 68 | 108 | 16 | 20 | Swarming.      | " | 1,038 | " | 1/14 |
| " | 13 ... | 132 | 37.4 | 40.4 | 39.6 | 80 | 88  | 12 | 16 | Absent.        | " | 1,045 | " | 1/18 |
| " | 14 ... | 133 | 36.2 | 39.2 | 39.0 | 56 | 80  | 12 | 16 | "              | " | 1,038 | " | 1/12 |
| " | 15 ... | 134 | 36.0 | 38.6 | 39.2 | 64 | 84  | 12 | 12 | "              | " | 1,030 | " | 1/15 |
| " | 16 ... | 135 | 37.5 | 38.7 | 38.6 | 64 | 76  | 16 | 16 | "              | " | 1,022 | " | 1/22 |
| " | 17 ... | 136 | 37.6 | 38.2 | 38.5 | 72 | 76  | 12 | 16 | "              | " | 1,030 | " | 1/12 |
| " | 18 ... | 137 | 37.4 | 38.5 | 38.4 | 64 | 76  | 12 | 16 | "              | " | 1,032 | " | 1/12 |
| " | 19 ... | 138 | 38.5 | 38.6 | 40.3 | 60 | 80  | 16 | 16 | Very numerous. | " | 1,028 | " | 1/8  |

The animal is now becoming very weak and is losing power over the hind limbs.

|   |        |     |      |      |      |    |    |    |    |           |   |       |   |      |
|---|--------|-----|------|------|------|----|----|----|----|-----------|---|-------|---|------|
| " | 20 ... | 139 | 38.3 | 38.6 | 39.7 | 72 | 80 | 12 | 16 | Absent.   | " | 1,022 | " | 1/9  |
| " | 21 ... | 140 | 38.4 | 39.5 | 39.8 | 64 | 88 | 12 | 20 | "         | " | 1,028 | " | 1/15 |
| " | 22 ... | 141 | 39.0 | 39.0 | 39.2 | 68 | 96 | 12 | 16 | "         | " | 1,022 | " | 1/13 |
| " | 23 ... | 142 | 38.7 | 39.2 | 39.2 | 88 | 88 | 32 | 20 | "         | " | 1,024 | " | 1/15 |
| " | 24 ... | 143 | 35.0 | 39.4 | 39.0 | 64 | 88 | 16 | 16 | Numerous. | " | 1,020 | " | 1/16 |

The animal is very weak, pulse feeble and thready, but the appetite is almost voracious.

|   |        |     |      |     |     |    |     |    |     |      |   |       |   |      |
|---|--------|-----|------|-----|-----|----|-----|----|-----|------|---|-------|---|------|
| " | 25 ... | 144 | 35.4 | ... | ... | 80 | ... | 32 | ... | Few. | " | 1,016 | " | 1/12 |
|---|--------|-----|------|-----|-----|----|-----|----|-----|------|---|-------|---|------|

The animal is still weaker, but is still able to feed. At 10 A.M., the animal fell, and death occurred at 11.30 A.M.

*Note.*—Examination of urine. Numerous forms of carbonate of lime crystals and a few oxalates were present throughout the course of the disease; Epithelial casts were observed for the first time on the 18th September, and were followed at a later period by granular casts in varying numbers.

Hippuric acid and phosphates were examined for throughout the case; the former was entirely absent, and the latter was present in traces on four occasions only.

Autopsy.—12 noon, 25th December 1892.

Body emaciated. There is no swelling or œdema about the body or limbs.

Thorax.—There is no fluid in the pleural cavities, or adhesions of the pleura.

Lungs.—Are small. There are a few lobules, purple in colour, which present an atelectatic condition ; these are principally situated at the anterior portion of both lungs. The apices or anterior lobules are the seat of emphysema, as also the inferior borders of both organs. On section, a pale red fluid representing the blood exudes from the cut ends of the vessels. The tissues present a healthy appearance.

The cavity of the pericardium contains half an ounce of a clear, amber-coloured fluid.

Heart.—Weighs 1 lb. 2 ozs. The base of the organ is surrounded by a light yellow coloured (jelly-like) exudation which also invades the origin of the great vessels, and is continued down on either side of the coronary vessels. A few dark red petechiæ are scattered over the surface of the exudation, but both are found to lie immediately beneath the visceral pericardium. Both ventricles are contracted.

On section.—

The right auricle contains a dark red clot completely filling its cavity. The lining membrane appears somewhat pale, but there are no sub-endocardial petechiæ.

The right Ventricle presents a healthy appearance. Valves healthy.

The left auricle—Ditto.

The left Ventricle.—Is empty and contracted ; there are only three or four sub-endocardial petechiæ the size of pins' heads.

The abdominal cavity is free from fluid, and there is a marked absence of any adipose tissue.

Liver.—Weighs 3 lbs. 7 ozs. Glisson's capsule is smooth and free from any signs of old inflammation. On section, the tissues appear healthy.

Spleen.—Weighs 15 ounces. The surface of the organ is pale. There are, however, a few dark coloured, circular sub-capsular petechiæ present. On section, the tissues appear normal in character.

Kidneys.—The right weighs 9 ounces ; the left 9½ ozs. These organs are both surrounded by a layer of yellow coloured gelatinous exudation, which enters in each case at the hilum of the organ, and surrounds the vessels and calyces. The capsules are adherent in places. The external cortical surfaces are pale in colour, but are free from petechiæ. On section.—Microscopically, there is nothing to be made out.

Stomach.—On section, contains no food, but about an ounce of a yellow-coloured fluid. The cuticular portion presents a healthy appearance. The villous portion.—The mucous membrane covering this portion of the organ for a distance of three inches from the line of demarcation presents a bright rose colour, but there is no loss of continuity, speaking generally. About the most dependent portion of the organ is situated a raised lump 2·5" × 1·5" × 1" hard on manipulation, with several small holes on its surface, leading into its interior. On section, this tumour is found to be circumscribed, and to lie immediately under the thick internal coat of the organ. It presents thickened wall, with an internal arrangement resembling somewhat a section of an ant-hill ; between the dividing walls are found masses or skins of fine worms (*Spiroptera megastoma*).

Dotted over the mucous lining are also twenty-four circular, raised plaques averaging ½ inch in diameter, with a thickened, pale-looking edge around the circumference of each. Some appear to be covered with the ordinary mucous membrane ; in others there seems to be some slight loss of the epithelial covering, whilst in others again the surface is cupped, and there is a thin layer of detritus, lying superficially and covering the loss of continuity of the epithelial coat.

The small Intestines.—Present a few small petechiæ scattered over the surface of the mucous membrane. At a distance of six feet from the pyloric end of the stomach a small circular and somewhat raised tumour was found ½" in diameter, pale in colour, and covered by mucous membrane. On section, it presents a small cavity, circular in form ⅓ inch in diameter, and filled with yellow healthy looking pus.

The Cœcum.—Presents a healthy appearance, but there are numerous small "strongyli" attached to its walls.

The Colon.—Several patches of congestion are dotted over its walls, but there is no solution of continuity observable.

Rectum.—Healthy.

For remarks, vide Précis of Cases.

COW.

Cow.—Deecani, aged 6 years. Fawn colour, healthy and in good condition, with calf at side, 3 weeks old.

Inoculated subcutaneously with rat's (*Mus decumanus*) blood, previously passed through Horses Nos. LXII and LXVII, and Donkey No. II. Hæmatozoon appeared on the 6th day. Four paroxysms of 5, 1, 1, and 2 days, with three intermissions lasting 55, 18, and 21 days respectively. Re-inoculation with Horse Surra blood 58 days after the last paroxysm. Hæmatozoon appeared on the 10th day. Six paroxysms of 1, 1, 2, 1, 1 and 2 days, with five intermissions of 10, 29, 70, 9, and 36 days respectively. Absence of hæmatozoon from last paroxysm to date, a period of 203 days.

| Date.  | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. | Urine.   |         |           |          |                |
|--------|-----------------|--------|--------|--------|------|--------------|------|---------------------|----------|---------|-----------|----------|----------------|
|        | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     | Colour.  | Sp. Gr. | Reaction. | Albumen. | Hippuric Acid. |
| 1892.  |                 |        |        |        |      |              |      |                     |          |         |           |          |                |
| August | 24              | ...    | ...    | 39·6   | ...  | 56           | ...  | 32                  | Healthy. | ...     | ...       | ...      | ...            |
| "      | 25              | ...    | 39·0   | 39·1   | 39·1 | 60           | 56   | 28                  | 28       | "       | ...       | ...      | ...            |
| "      | 26              | ...    | 39·2   | 39·2   | 39·2 | 64           | 60   | 30                  | 36       | "       | ...       | ...      | ...            |
| "      | 27              | ...    | 39·1   | 39·2   | 39·3 | 72           | 68   | 36                  | 32       | "       | ...       | ...      | ...            |
| "      | 28              | ...    | 38·8   | 38·9   | 39·2 | 52           | 60   | 24                  | 28       | "       | ...       | ...      | ...            |

The animal was inoculated subcutaneously over the left shoulder with 1·0 c. c. of blood, containing very numerous hæmatozoa taken from the jugular vein of Donkey No. II.



| Date.           | Temperature °C.   |        |         | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |                       |          |                   |  |
|-----------------|---|--------|---------|--------|------|--------------|------|------------------------|---------|---------|-----------------------|----------|-------------------|--|
|                 | A.M.  | 1 P.M. | 5. P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction.             | Albumen. | Hippuric<br>Acid. |  |
| 1892.           |   |        |         |        |      |              |      |                        |         |         |                       |          |                   |  |
| August 29 . ... | 39.1  | 39.3   | 39.3    | 64     | 60   | 21           | 20   | Absent .               | ...     | ...     | ...                   | ...      | ...               |  |
|                 | There is no swelling at the seat of inoculation.  |        |         |        |      |              |      |                        |         |         |                       |          |                   |  |
| " 30 ...        | 38.0  | 39.2   | 39.3    | 68     | 72   | 28           | 28   | Absent .               | Clear.  | 1,034   | Alkaline.             | Nil.     | Nil.              |  |
|                 | A very slight thickening can be felt under the skin at the seat of inoculation.                             |        |         |        |      |              |      |                        |         |         |                       |          |                   |  |
| " 31 ...        | 39.1  | 39.2   | 39.3    | 40     | 68   | 28           | 20   | Absent .               | Clear.  | 1,036   | Alkaline.             | Nil.     | "                 |  |
|                 | Condition unchanged.  |        |         |        |      |              |      |                        |         |         |                       |          |                   |  |
| September 1 ... | 39.2  | 39.3   | 39.3    | 60     | 56   | 20           | 16   | "                      | "       | 1,034   | "                     | "        | "                 |  |
|                 | Condition unchanged.  |        |         |        |      |              |      |                        |         |         |                       |          |                   |  |
| " 2 ...         | 39.3  | 39.3   | 40.0    | 56     | 56   | 20           | 24   | Few.                   | "       | 1,028   | "                     | Trace.   | "                 |  |
|                 | Condition unchanged.  |        |         |        |      |              |      |                        |         |         |                       |          |                   |  |
| " 3 ...         | 41.5  | 41.8   | 41.9    | 64     | 88   | 32           | 20   | Swarm-<br>ing.         | "       | 1,050   | "                     | 1/50     | "                 |  |
|                 | The mucous membranes are slightly injected, the pulse is hard and frequent, but rumination is regular.      |        |         |        |      |              |      |                        |         |         |                       |          |                   |  |
| " 4 ...         | 41.0  | 41.0   | 41.3    | 68     | 72   | 28           | 20   | Swarm-<br>ing.         | Clear.  | 1,042   | Alkaline.             | 1/50     | Nil.              |  |
|                 | The coat is somewhat staring, pulse hard and frequent, but the appetite continues good, rumination regular. |        |         |        |      |              |      |                        |         |         |                       |          |                   |  |
| " 5 ...         | 39.6  | 40.5   | 41.2    | 60     | 80   | 28           | 28   | Very nu-<br>merous.    | Clear.  | 1,037   | Alkaline.             | Trace.   | "                 |  |
|                 | The animal appears in good health.  |        |         |        |      |              |      |                        |         |         |                       |          |                   |  |
| " 6 ...         | 39.0  | 39.3   | 39.6    | 56     | 48   | 24           | 24   | Few.                   | Clear.  | 1,035   | Alkaline.             | Trace.   | Nil.              |  |
| " 7 ...         | 39.3  | 39.3   | 39.3    | 64     | 60   | 24           | 32   | Absent.                | "       | 1,030   | "                     | "        | "                 |  |
| " 8 ...         | 38.6  | 39.3   | 39.3    | 64     | 56   | 20           | 32   | "                      | "       | 1,038   | "                     | "        | "                 |  |
| " 9 ...         | 39.3  | 39.7   | 39.8    | 56     | 72   | 20           | 28   | "                      | "       | 1,028   | Strongly<br>alkaline. | "        | "                 |  |
| " 10 ...        | 39.3  | 39.3   | 39.3    | 72     | 60   | 28           | 20   | "                      | "       | 1,034   | Alkaline.             | "        | "                 |  |
| " 11 ...        | 38.0  | 38.2   | 37.7    | 68     | 60   | 20           | 20   | "                      | "       | 1,040   | "                     | "        | "                 |  |
| " 12 ...        | 39.0  | 39.3   | 39.6    | 57     | 68   | 22           | 22   | "                      | "       | 1,040   | Strongly<br>alkaline. | "        | "                 |  |
| " 13 ...        | 39.3  | 39.3   | 39.7    | 60     | 60   | 28           | 24   | "                      | "       | 1,020   | Alkaline.             | "        | "                 |  |
| " 14 ...        | 39.3  | 40.0   | 40.1    | 60     | 60   | 24           | 28   | "                      | "       | 1,020   | "                     | "        | "                 |  |
| " 15 ...        | 38.7  | 40.0   | 40.1    | 60     | 60   | 24           | 28   | "                      | "       | 1,027   | "                     | "        | "                 |  |
| " 16 ...        | 39.7  | 40.2   | 40.1    | 60     | 64   | 36           | 22   | "                      | "       | 1,036   | Strongly<br>alkaline. | "        | "                 |  |
| " 17 ...        | 40.0  | 40.0   | 39.8    | 72     | 64   | 24           | 22   | "                      | "       | 1,046   | Alkaline.             | "        | "                 |  |
| " 18 ...        | 38.0  | 39.3   | 40.0    | 64     | 68   | 16           | 20   | "                      | "       | 1,016   | "                     | "        | "                 |  |
| " 19 ...        | 39.3  | 39.7   | 40.1    | 56     | 64   | 24           | 24   | "                      | "       | 1,038   | Strongly<br>alkaline. | 1/21     | "                 |  |
| " 20 ...        | 39.3  | 40.0   | 40.0    | 72     | 68   | 28           | 24   | "                      | "       | 1,034   | "                     | Trace.   | "                 |  |
| " 21 ...        | 39.8  | 39.3   | 39.8    | 68     | 60   | 20           | 24   | "                      | "       | 1,048   | "                     | "        | "                 |  |
| " 22 ...        | 39.3  | 39.6   | 40.0    | 52     | 60   | 20           | 24   | "                      | "       | 1,048   | "                     | "        | "                 |  |
| " 23 ...        | 39.3  | 39.3   | 39.8    | 62     | 68   | 20           | 24   | "                      | "       | 1,046   | "                     | "        | "                 |  |
| " 24 ...        | 39.3  | 39.7   | 39.3    | 64     | 64   | 24           | 24   | "                      | "       | 1,047   | "                     | Nil.     | "                 |  |
| " 25 ...        | 39.2  | 39.3   | 39.3    | 64     | 64   | 20           | 20   | "                      | "       | 1,040   | "                     | "        | "                 |  |
| " 26 ...        | 39.1  | 39.6   | 40.1    | 60     | 60   | 20           | 24   | "                      | "       | 1,052   | Alkaline.             | "        | "                 |  |
| " 27 ...        | 39.3  | 40.0   | 39.3    | 40     | 56   | 32           | 24   | "                      | "       | 1,053   | "                     | Tracc.   | "                 |  |
| " 28 ...        | 39.2  | 39.3   | 39.7    | 60     | 60   | 24           | 24   | "                      | "       | 1,042   | "                     | "        | "                 |  |
| " 29 ...        | 38.8  | 39.7   | 39.7    | 52     | 60   | 28           | 24   | "                      | "       | 1,038   | "                     | "        | "                 |  |
| " 30 ...        | 39.7  | 39.8   | 39.8    | 60     | 60   | 32           | 24   | "                      | "       | 1,032   | "                     | "        | "                 |  |
| October 1 ...   | 38.0  | 39.3   | 39.3    | 56     | 60   | 24           | 28   | "                      | "       | 1,044   | "                     | "        | "                 |  |
| " 2 ...         | 39.3  | 39.6   | 39.7    | 56     | 60   | 24           | 24   | "                      | "       | 1,034   | "                     | 1/18     | "                 |  |
| " 3 ...         | 39.2  | 39.3   | 39.3    | 60     | 56   | 20           | 20   | "                      | "       | 1,024   | "                     | 1/16     | "                 |  |
| " 4 ...         | 39.1  | 39.7   | 40.1    | 52     | 64   | 24           | 24   | "                      | "       | 1,044   | "                     | 1/14     | "                 |  |
| " 5 ...         | 38.6  | 39.2   | 39.7    | 64     | 60   | 24           | 24   | "                      | "       | 1,042   | "                     | 1/30     | "                 |  |
| " 6 ...         | 38.6  | 40.0   | 40.0    | 64     | 56   | 20           | 16   | "                      | "       | 1,040   | "                     | 1/50     | "                 |  |
| " 7 ...         | 39.3  | 39.7   | 39.1    | 56     | 60   | 24           | 24   | "                      | "       | 1,042   | "                     | Tracc.   | "                 |  |
| " 8 ...         | 38.4  | 39.5   | 39.3    | 52     | 64   | 20           | 28   | "                      | "       | 1,038   | "                     | "        | "                 |  |
|                 | The secretion of milk decreasing in quantity.   |        |         |        |      |              |      |                        |         |         |                       |          |                   |  |
| " 9 ...         | 38.5  | 39.1   | 39.6    | 60     | 60   | 20           | 24   | "                      | "       | 1,033   | "                     | "        | "                 |  |
| " 10 ...        | 38.5  | 38.8   | 39.8    | 56     | 64   | 24           | 28   | Absent.                | Clear.  | 1,038   | Alkaline.             | Trace.   | "                 |  |
| " 11 ...        | 38.5  | 39.1   | 39.4    | 64     | 64   | 28           | 24   | "                      | "       | 1,046   | Strongly<br>alkaline. | Nil.     | "                 |  |
| " 12 ...        | 38.5  | 39.0   | 39.4    | 52     | 52   | 24           | 24   | "                      | "       | 1,048   | Alkaline.             | Trace.   | "                 |  |

| Date.  |    |     | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |                       |          |                   |
|--|----|-----|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|-----------------------|----------|-------------------|
|  |    |     | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction.             | Albumen. | Hippuric<br>Acid. |
| 1892.  |    |     |                 |        |        |        |      |              |      |                        |         |         |                       |          |                   |
| October  | 13 | ... | 38.5            | 39.2   | 39.1   | 52     | 60   | 24           | 24   | Absent.                | Clear.  | 1,042   | Alkaline.             | Trace.   | Nil.              |
| "  | 14 | ..  | 38.6            | 39.0   | 38.8   | 60     | 68   | 24           | 24   | "                      | Turbid. | 1,045   | "                     | "        | "                 |
| "  | 15 | ... | 38.8            | 39.1   | 39.6   | 52     | 64   | 20           | 28   | "                      | Clear.  | 1,042   | "                     | 1/30     | "                 |
| "  | 16 | ... | 38.5            | 39.5   | 39.7   | 64     | 64   | 24           | 24   | "                      | "       | 1,042   | "                     | Trace.   | "                 |
| "  | 17 | ... | 39.1            | 39.3   | 39.3   | 64     | 64   | 20           | 28   | "                      | "       | 1,010   | "                     | 1/35     | "                 |
| "  | 18 | ..  | 39.1            | 39.4   | 39.6   | 56     | 64   | 24           | 28   | "                      | "       | 1,038   | "                     | 1/40     | "                 |
| "  | 19 | ... | 38.4            | 39.2   | 39.8   | 64     | 64   | 36           | 28   | "                      | "       | 1,033   | "                     | Trace.   | "                 |
| "  | 20 | ... | 38.6            | 38.8   | 39.0   | 64     | 68   | 28           | 28   | "                      | Turbid. | 1,020   | "                     | "        | "                 |
| "  | 21 | ... | 38.7            | 38.8   | 39.0   | 56     | 64   | 28           | 24   | "                      | Clear.  | 1,032   | "                     | "        | "                 |
| "  | 22 | ... | 38.4            | 38.8   | 39.2   | 60     | 64   | 24           | 28   | "                      | "       | 1,038   | "                     | "        | "                 |
| "  | 23 | ... | 38.6            | 38.6   | 38.8   | 64     | 60   | 28           | 24   | "                      | Turbid. | 1,046   | "                     | Nil.     | "                 |
| "  | 24 | ... | 38.4            | 38.4   | 38.6   | 56     | 60   | 20           | 24   | "                      | "       | 1,040   | "                     | Trace.   | "                 |
| "  | 25 | ... | 38.3            | 38.6   | 38.7   | 60     | 64   | 24           | 20   | "                      | "       | 1,044   | "                     | "        | "                 |
| "  | 26 | ... | 38.6            | 38.6   | 38.8   | 64     | 60   | 20           | 24   | "                      | Clear.  | 1,027   | "                     | "        | "                 |
| "  | 27 | ... | 38.6            | 38.4   | 38.6   | 64     | 64   | 16           | 24   | "                      | Turbid. | 1,048   | "                     | "        | "                 |
| "  | 28 | ... | 38.0            | 38.6   | 39.0   | 60     | 64   | 24           | 24   | "                      | Clear.  | 1,038   | "                     | 1/26     | "                 |
| "  | 29 | ... | 38.6            | 38.6   | 38.8   | 60     | 64   | 24           | 24   | "                      | "       | 1,039   | "                     | Nil.     | "                 |
| "  | 30 | ... | 38.4            | 38.6   | 39.4   | 56     | 60   | 20           | 24   | "                      | "       | 1,032   | "                     | 1/35     | "                 |
| "  | 31 | ... | 39.0            | 40.0   | 39.2   | 60     | 64   | 20           | 28   | "                      | Turbid. | 1,050   | "                     | Trace.   | "                 |
| November.  | 1  | ... | 39.5            | 39.6   | 40.6   | 64     | 68   | 24           | 28   | Few.                   | "       | 1,036   | "                     | Nil.     | "                 |
| "  | 2  | ... | 38.2            | 38.4   | 38.6   | 60     | 60   | 24           | 24   | "                      | "       | 1,024   | "                     | Trace.   | "                 |
| "  | 3  | ... | 38.4            | 38.6   | 38.8   | 64     | 64   | 16           | 28   | "                      | "       | 1,048   | "                     | 1/32     | "                 |
| "  | 4  | ... | 38.4            | 38.8   | 39.0   | 64     | 64   | 20           | 24   | "                      | Clear.  | 1,038   | "                     | Trace.   | "                 |
| "  | 5  | ... | 38.0            | 38.4   | 38.8   | 64     | 64   | 20           | 24   | "                      | "       | 1,025   | "                     | "        | "                 |
| "  | 6  | ... | 38.2            | 38.8   | 39.0   | 56     | 64   | 16           | 20   | "                      | "       | 1,030   | "                     | 1/32     | "                 |
| The cow ceased to yield any milk.  |    |     |                 |        |        |        |      |              |      |                        |         |         |                       |          |                   |
| "  | 7  | ... | 38.4            | 38.8   | 39.1   | 68     | 64   | 24           | 20   | "                      | "       | 1,028   | "                     | 1/45     | "                 |
| A very large hæmatozoon was observed in the blood about 4 times the size of the ordinary Horse Surra hæmatozoon, but similar in shape. |    |     |                 |        |        |        |      |              |      |                        |         |         |                       |          |                   |
| "  | 8  | ... | 39.0            | 39.2   | 39.2   | 64     | 64   | 24           | 28   | "                      | "       | 1,028   | Slightly<br>alkaline. | 1/40     | Nil.              |
| "  | 9  | ... | 38.6            | 38.4   | 39.0   | 64     | 64   | 24           | 20   | "                      | "       | 1,038   | Alkaline.             | 1/35     | "                 |
| "  | 10 | ... | 38.4            | 37.8   | 38.4   | 64     | 64   | 16           | 20   | "                      | "       | 1,030   | "                     | 1/30     | "                 |
| "  | 11 | ... | 37.0            | 38.6   | 38.8   | 60     | 60   | 20           | 20   | "                      | "       | 1,030   | "                     | 1/35     | "                 |
| "  | 12 | ... | 38.4            | 39.1   | 39.4   | 64     | 64   | 16           | 24   | Absent.                | Turbid. | 1,038   | "                     | 1/34     | "                 |
| "  | 13 | ... | 38.1            | 38.6   | 39.4   | 64     | 64   | 16           | 24   | "                      | "       | 1,034   | "                     | 1/40     | "                 |
| "  | 14 | ... | 38.2            | 38.5   | 39.4   | 64     | 64   | 16           | 24   | "                      | "       | 1,042   | "                     | 1/30     | "                 |
| "  | 15 | ... | 38.0            | 37.4   | 39.1   | 64     | 64   | 20           | 24   | "                      | "       | 1,032   | "                     | 1/23     | "                 |
| "  | 16 | ... | 38.3            | 38.2   | 38.8   | 64     | 60   | 24           | 24   | "                      | "       | 1,048   | "                     | 1/46     | "                 |
| "  | 17 | ... | 37.4            | 38.0   | 39.0   | 60     | 68   | 16           | 20   | "                      | "       | 1,058   | "                     | 1/4      | "                 |
| "  | 18 | ... | 37.6            | 38.4   | 39.6   | 44     | 64   | 16           | 24   | "                      | "       | 1,054   | "                     | 1/40     | "                 |
| "  | 19 | ... | 38.1            | 38.4   | 39.6   | 64     | 64   | 12           | 20   | "                      | "       | 1,046   | "                     | 1/30     | "                 |
| "  | 20 | ... | 37.7            | 37.0   | 39.4   | 64     | 64   | 16           | 20   | Few.                   | "       | 1,042   | "                     | 1/30     | "                 |
| "  | 21 | ... | 36.8            | 38.7   | 39.4   | 64     | 64   | 12           | 20   | "                      | "       | 1,038   | "                     | 1/30     | "                 |
| "  | 22 | ... | 37.2            | 38.0   | 39.4   | 64     | 64   | 12           | 24   | "                      | "       | 1,058   | "                     | 1/20     | "                 |
| "  | 23 | ... | 38.4            | 38.6   | 39.4   | 64     | 64   | 20           | 20   | "                      | Clear.  | 1,030   | "                     | 1/36     | "                 |
| "  | 24 | ... | 38.3            | 38.5   | 39.3   | 64     | 64   | 16           | 20   | "                      | "       | 1,020   | "                     | Trace.   | "                 |
| "  | 25 | ... | 38.0            | 38.4   | 39.4   | 60     | 64   | 16           | 24   | "                      | "       | 1,034   | "                     | "        | "                 |
| "  | 26 | ... | 38.0            | 38.6   | 39.8   | 64     | 64   | 16           | 20   | "                      | "       | 1,020   | "                     | "        | "                 |
| "  | 27 | ... | 37.4            | 38.0   | 39.6   | 52     | 72   | 16           | 20   | "                      | Turbid. | 1,040   | "                     | "        | "                 |
| "  | 28 | ... | 37.7            | 38.1   | 39.6   | 64     | 64   | 16           | 24   | "                      | "       | 1,047   | "                     | "        | "                 |
| "  | 29 | ... | 37.6            | 38.2   | 39.6   | 64     | 64   | 16           | 24   | "                      | "       | 1,052   | "                     | 1/26     | "                 |
| "  | 30 | ... | 37.6            | 38.2   | 39.4   | 64     | 64   | 16           | 20   | "                      | "       | 1,046   | "                     | 1/35     | "                 |
| December   | 1  | ... | 37.6            | 38.6   | 38.8   | 64     | 64   | 16           | 20   | "                      | "       | 1,054   | "                     | 1/32     | "                 |
| "  | 2  | ... | 37.2            | 38.2   | 39.2   | 52     | 72   | 16           | 16   | "                      | "       | 1,058   | "                     | 1/50     | "                 |
| "  | 3  | ... | 37.2            | 38.4   | 39.3   | 64     | 68   | 16           | 20   | "                      | "       | 1,050   | "                     | Trace.   | "                 |
| "  | 4  | ... | 36.8            | 38.0   | 39.0   | 56     | 64   | 12           | 12   | "                      | "       | 1,054   | "                     | 1/21     | "                 |
| "  | 5  | ... | 37.0            | 38.0   | 38.6   | 64     | 56   | 12           | 16   | "                      | "       | 1,051   | "                     | 1/40     | "                 |
| "  | 6  | ... | 37.6            | 38.4   | 39.0   | 52     | 64   | 12           | 16   | "                      | "       | 1,048   | "                     | 1/40     | "                 |
| "  | 7  | ... | 36.6            | 38.2   | 39.0   | 64     | 64   | 12           | 16   | "                      | "       | 1,040   | "                     | Trace.   | "                 |
| "  | 8  | ... | 36.8            | 38.1   | 38.8   | 52     | 60   | 12           | 12   | "                      | "       | 1,050   | "                     | 1/30     | "                 |
| "  | 9  | ... | 36.5            | 37.7   | 38.8   | 52     | 60   | 12           | 16   | "                      | "       | 1,024   | "                     | 1/50     | "                 |
| "  | 10 | ... | 37.2            | 37.8   | 39.0   | 52     | 64   | 12           | 12   | "                      | "       | 1,054   | "                     | 1/40     | "                 |
| "  | 11 | ... | 37.2            | 38.0   | 38.8   | 52     | 64   | 12           | 16   | "                      | "       | 1,052   | "                     | 1/56     | "                 |
| "  | 12 | ... | 38.0            | 39.0   | 39.6   | 60     | 64   | 16           | 16   | "                      | Clear.  | 1,040   | Acid.                 | 1/56     | "                 |
| "  | 13 | ... | 39.0            | 39.6   | 40.0   | 60     | 64   | 12           | 16   | "                      | Turbid. | 1,034   | Alkaline.             | Trace.   | "                 |
| "  | 14 | ... | 37.9            | 38.9   | 39.3   | 64     | 64   | 16           | 16   | Absent.                | Clear.  | 1,043   | Acid.                 | 1/36     | "                 |
| "  | 15 | ... | 37.8            | 38.8   | 39.2   | 72     | 72   | 12           | 16   | "                      | "       | 1,033   | Alkaline.             | 1/40     | "                 |
| "  | 16 | ... | 38.0            | 38.3   | 39.0   | ...    | ...  | 16           | 16   | "                      | Turbid. | 1,030   | "                     | 1/40     | "                 |
| "  | 17 | ... | 37.8            | 38.3   | 38.8   | 48     | 60   | 16           | 16   | "                      | Clear.  | 1,044   | "                     | 1/33     | "                 |



| Date.   |    |     | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |           |          |                   |
|---|----|-----|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|-----------|----------|-------------------|
|   |    |     | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction. | Albumen. | Hippuric<br>Acid. |
| 1892.   |    |     |                 |        |        |        |      |              |      |                        |         |         |           |          |                   |
| December  | 18 | ... | 37.8            | 38.6   | 39.0   | 52     | 72   | 16           | 20   | Absent.                | Clear.  | 1,048   | Alkaline. | 1/30     | Nil.              |
| "   | 19 | ... | 38.4            | 38.8   | 39.1   | 56     | 64   | 16           | 16   | "                      | Turbid. | 1,044   | "         | 1/50     | "                 |
| "   | 20 | ... | 37.2            | 38.4   | 38.8   | 52     | 60   | 12           | 16   | "                      | "       | 1,046   | "         | 1/40     | "                 |
| "   | 21 | ... | 37.6            | 38.0   | 38.8   | 64     | 64   | 12           | 16   | "                      | "       | 1,054   | "         | 1/33     | "                 |
| "   | 22 | ... | 36.4            | 37.2   | 38.0   | 58     | 68   | 16           | 12   | "                      | "       | 1,044   | "         | 1/25     | "                 |
| "   | 23 | ..  | 37.0            | 38.2   | 40.2   | 64     | 64   | 12           | 16   | "                      | "       | 1,050   | "         | 1/34     | "                 |
| "   | 24 | ..  | 37.4            | 38.4   | 39.7   | 68     | 72   | 12           | 16   | "                      | "       | 1,048   | "         | 1/40     | "                 |
| "   | 25 | ... | 37.6            | 38.6   | 39.1   | 64     | 72   | 16           | 12   | "                      | "       | 1,044   | "         | Trace.   | "                 |
| "   | 26 | ... | 38.0            | 38.6   | 39.1   | 52     | 72   | 12           | 16   | "                      | "       | 1,040   | "         | Nil.     | "                 |
| "   | 27 | ... | 38.0            | 38.0   | 38.6   | 64     | 68   | 16           | 16   | "                      | "       | 1,050   | "         | Trace.   | "                 |
| "   | 28 | ..  | 37.6            | 38.4   | 39.0   | 52     | 64   | 12           | 16   | "                      | "       | 1,048   | "         | 1/35     | "                 |
| "   | 29 | ..  | 37.6            | 38.0   | 38.8   | 48     | 52   | 16           | 16   | "                      | "       | 1,044   | "         | 1/35     | "                 |
| "   | 30 | ... | 37.0            | 38.1   | 38.8   | 48     | 60   | 12           | 12   | "                      | "       | 1,038   | "         | 1/60     | "                 |
| "   | 31 | ... | 37.8            | 38.2   | 38.8   | 56     | 60   | 12           | 16   | "                      | Clear.  | 1,038   | "         | Nil.     | "                 |
| 1893.   |    |     |                 |        |        |        |      |              |      |                        |         |         |           |          |                   |
| January   | 1  | ... | 38.2            | 38.5   | 39.2   | 60     | 64   | 16           | 16   | "                      | Turbid. | 1,040   | "         | Trace.   | "                 |
| "   | 2  | ... | 38.0            | 38.6   | 38.8   | 52     | 64   | 12           | 16   | "                      | Clear.  | 1,042   | "         | Nil.     | "                 |
| "   | 3  | ..  | 37.6            | 38.4   | 38.7   | 52     | 64   | 16           | 12   | "                      | "       | 1,042   | "         | "        | "                 |
| "   | 4  | ... | 38.0            | 38.4   | 38.8   | 56     | 64   | 12           | 20   | "                      | "       | 1,043   | "         | "        | "                 |
| "   | 5  | ..  | 38.0            | 38.8   | 39.0   | 60     | 64   | 16           | 16   | "                      | Turbid. | 1,048   | "         | 1/40     | "                 |
| "   | 6  | ... | 38.2            | 38.2   | 37.8   | 56     | 64   | 12           | 16   | "                      | "       | 1,042   | "         | 1/40     | "                 |
| "   | 7  | ... | 38.0            | 38.0   | 38.6   | 52     | 64   | 16           | 20   | "                      | Clear.  | 1,042   | "         | 1/58     | "                 |
| "   | 8  | ... | 38.0            | 38.3   | 38.8   | 56     | 64   | 16           | 16   | "                      | "       | 1,038   | "         | Nil.     | "                 |
| "   | 9  | ... | 38.1            | 38.4   | 38.5   | 56     | 64   | 16           | 16   | "                      | "       | 1,047   | "         | "        | "                 |
| "   | 10 | ... | 38.6            | 38.8   | 38.8   | 64     | 68   | 16           | 20   | "                      | "       | 1,041   | "         | 1/60     | "                 |
| "   | 11 | ... | 37.4            | 38.4   | 38.6   | 60     | 64   | 12           | 16   | "                      | "       | 1,044   | "         | 1/54     | "                 |
| "   | 12 | ... | 36.8            | 38.2   | 38.6   | 60     | 64   | 12           | 16   | "                      | Turbid. | 1,046   | "         | 1/50     | "                 |
| "   | 13 | ..  | 37.0            | 37.8   | 38.8   | 56     | 64   | 12           | 16   | "                      | Clear.  | 1,046   | "         | 1/55     | "                 |
| "   | 14 | ..  | 37.0            | 37.8   | 38.6   | 60     | 56   | 12           | 12   | "                      | "       | 1,046   | "         | Nil.     | "                 |
| "   | 15 | ... | 37.2            | 38.2   | 38.8   | 60     | 64   | 16           | 16   | "                      | Turbid. | 1,046   | "         | "        | "                 |
| "   | 16 | ... | 37.0            | 38.0   | 38.4   | 48     | 56   | 12           | 12   | "                      | "       | 1,048   | "         | "        | "                 |
| "   | 17 | ..  | 37.2            | 37.8   | 38.6   | 44     | 68   | 12           | 16   | "                      | "       | 1,054   | "         | "        | "                 |
| "   | 18 | ... | 37.4            | 38.2   | 39.0   | 52     | 64   | 12           | 12   | "                      | "       | 1,054   | "         | Trace.   | "                 |
| "   | 19 | ..  | 37.8            | 38.3   | 38.2   | 56     | 60   | 12           | 16   | "                      | "       | 1,054   | "         | "        | "                 |
| "   | 20 | ... | 37.1            | 38.2   | 38.4   | 48     | 60   | 12           | 16   | "                      | "       | 1,060   | "         | 1/60     | "                 |
| "   | 21 | ... | 37.6            | 38.0   | 39.0   | 52     | 64   | 12           | 16   | "                      | "       | 1,050   | "         | 1/70     | "                 |
| "   | 22 | ... | 37.2            | 38.1   | 39.0   | 48     | 64   | 16           | 12   | "                      | "       | 1,048   | "         | 1/60     | "                 |
| "   | 23 | ..  | 37.2            | 38.2   | 38.5   | 48     | 64   | 12           | 12   | "                      | "       | 1,050   | "         | Trace.   | "                 |
| "   | 24 | ..  | 37.6            | 38.2   | 38.9   | 60     | 64   | 12           | 12   | "                      | "       | 1,054   | "         | Trace.   | "                 |
| "   | 25 | ..  | 37.4            | 38.6   | 38.9   | 52     | 56   | 12           | 12   | "                      | "       | 1,052   | "         | 1/80     | "                 |
| "   | 26 | ... | 37.0            | 39.0   | 39.2   | 68     | 64   | 12           | 12   | "                      | "       | 1,050   | "         | 1/75     | "                 |
| "   | 27 | ... | 38.8            | 38.2   | 39.0   | 64     | 56   | 16           | 16   | "                      | "       | 1,050   | "         | 1/60     | "                 |
| "   | 28 | ... | 37.6            | 38.4   | 38.7   | 56     | 60   | 12           | 16   | "                      | "       | 1,054   | "         | Trace.   | "                 |
| "   | 29 | ... | 38.0            | 38.4   | 39.2   | 52     | 60   | 12           | 16   | "                      | "       | 1,056   | "         | Nil.     | 1/6               |
| "   | 30 | ... | 37.8            | 39.3   | 39.4   | 52     | 60   | 12           | 12   | "                      | "       | 1,044   | "         | "        | Nil.              |
| "   | 31 | ... | 37.8            | 38.6   | 39.0   | 52     | 52   | 12           | 16   | "                      | "       | 1,040   | "         | 1/58     | "                 |
| February  | 1  | ... | 37.5            | 38.8   | 39.4   | 52     | 64   | 12           | 12   | "                      | "       | 1,048   | "         | 1/30     | Trace.            |
| "   | 2  | ... | 37.6            | 38.2   | 39.0   | 52     | 60   | 12           | 16   | "                      | "       | 1,054   | "         | Trace.   | Nil.              |
| "   | 3  | ..  | 37.8            | 38.4   | 39.0   | 60     | 60   | 8            | 12   | "                      | "       | 1,046   | "         | "        | "                 |
| "   | 4  | ... | 38.0            | 38.2   | 39.2   | 56     | 64   | 12           | 16   | "                      | "       | 1,048   | "         | "        | Trace.            |
| "   | 5  | ... | 37.6            | 38.6   | 39.0   | 60     | 64   | 12           | 16   | "                      | "       | 1,050   | "         | "        | Nil.              |
| "   | 6  | ... | 37.7            | 38.6   | 38.6   | 56     | 64   | 16           | 16   | "                      | "       | 1,050   | "         | 1/52     | Trace.            |
| "   | 7  | ... | 37.8            | 38.4   | 39.0   | 56     | 60   | 16           | 16   | "                      | "       | 1,072   | "         | 1/50     | "                 |
| "   | 8  | ..  | 37.6            | 38.4   | 38.3   | 60     | 56   | 12           | 16   | "                      | "       | 1,056   | "         | 1/40     | Nil.              |
| "   | 9  | ... | 37.0            | 38.1   | 39.0   | 56     | 60   | 12           | 16   | "                      | "       | 1,043   | "         | 1/40     | Trace.            |
| The animal was subcutaneously inoculated at 6 P.M. with 2.0 c.c. of blood containing numerous hæmatozoa, drawn from the jugular vein of Horse No. LXXXIV immediately after death. |    |     |                 |        |        |        |      |              |      |                        |         |         |           |          |                   |
| "   | 10 | ... | 37.2            | 38.2   | 38.4   | 48     | 72   | 12           | 16   | "                      | "       | 1,050   | "         | 1/70     | "                 |
| Nothing is to be seen or felt at the seat of inoculation.   |    |     |                 |        |        |        |      |              |      |                        |         |         |           |          |                   |
| "   | 11 | ... | 38.2            | 38.4   | 39.0   | 60     | 56   | 12           | 12   | "                      | "       | 1,036   | "         | Trace.   | "                 |
| Condition unchanged.  |    |     |                 |        |        |        |      |              |      |                        |         |         |           |          |                   |
| "   | 12 | ... | 38.6            | 38.4   | 38.4   | 56     | 60   | 12           | 16   | "                      | "       | 1,024   | "         | "        | "                 |
| "   | 13 | ... | 37.8            | 38.4   | 39.2   | 40     | 52   | 12           | 16   | "                      | "       | 1,042   | "         | 1/60     | "                 |
| "   | 14 | ... | 38.2            | 38.2   | 38.7   | 48     | 56   | 12           | 12   | "                      | Clear.  | 1,028   | "         | Nil.     | "                 |
| "   | 15 | ... | 37.0            | 38.2   | 38.6   | 44     | 56   | 12           | 16   | "                      | "       | 1,044   | Neutral.  | 1/80     | "                 |
| "   | 16 | ... | 37.6            | 38.4   | 38.6   | 48     | 56   | 16           | 16   | "                      | Turbid. | 1,058   | Alkaline. | Nil.     | "                 |
| "   | 17 | ... | 38.4            | 38.8   | 39.0   | 52     | 52   | 16           | 16   | "                      | "       | 1,035   | Acid.     | "        | "                 |
| "   | 18 | ... | 38.2            | 38.5   | 39.3   | 48     | 60   | 12           | 16   | Few.                   | "       | 1,034   | Alkaline. | "        | "                 |



| Date.    |    |     | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |           |          |                   |
|----------|----|-----|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|-----------|----------|-------------------|
|          |    |     | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction. | Albumen. | Hippuric<br>Acid. |
| 1893.    |    |     |                 |        |        |        |      |              |      |                        |         |         |           |          |                   |
| February | 19 | ... | 37.1            | 38.4   | 39.5   | 48     | 68   | 12           | 20   | Absent.                | Turbid  | 1,028   | Alkaline. | Trace.   | Absent.           |
| "        | 20 | ... | 38.8            | 38.3   | 38.6   | 60     | 60   | 12           | 12   | "                      | Clear.  | 1,030   | "         | 1/50     | "                 |
| "        | 21 | ... | 38.2            | 38.5   | 38.7   | 52     | 60   | 12           | 16   | "                      | "       | 1,038   | "         | Nil.     | "                 |
| "        | 22 | ... | 38.2            | 38.5   | 39.0   | 48     | 60   | 12           | 12   | "                      | "       | 1,034   | "         | Trace.   | "                 |
| "        | 23 | ... | 37.7            | 38.0   | 38.6   | 52     | 48   | 12           | 12   | "                      | Turbid. | 1,050   | "         | Nil.     | "                 |
| "        | 24 | ... | 38.8            | 38.4   | 39.0   | 52     | 52   | 12           | 12   | "                      | Clear.  | 1,044   | "         | "        | "                 |
| "        | 25 | ... | 38.4            | 38.5   | 39.1   | 52     | 56   | 12           | 16   | "                      | "       | 1,022   | "         | Trace.   | "                 |
| "        | 26 | ... | 37.6            | 38.2   | 38.8   | 48     | 60   | 12           | 12   | "                      | Turbid. | 1,036   | "         | "        | "                 |
| "        | 27 | ... | 38.0            | 38.0   | 39.0   | 52     | 60   | 12           | 16   | "                      | Clear.  | 1,031   | "         | Nil.     | "                 |
| "        | 28 | ... | 37.2            | 38.7   | 38.8   | 44     | 56   | 16           | 12   | "                      | "       | 1,044   | "         | "        | Trace.            |
| March    | 1  | ... | 38.6            | 38.8   | 39.6   | 52     | 52   | 16           | 20   | Few.                   | Turbid. | 1,052   | "         | Trace.   | "                 |
| "        | 2  | ... | 38.4            | 38.4   | 39.0   | 52     | 52   | 12           | 16   | Absent.                | Clear.  | 1,042   | "         | 1/60     | Nil.              |
| "        | 3  | ... | 37.5            | 38.5   | 39.0   | 48     | 60   | 12           | 16   | "                      | Turbid. | 1,060   | "         | 1/60     | "                 |
| "        | 4  | ... | 38.0            | 38.3   | 38.9   | 64     | 60   | 12           | 18   | "                      | "       | 1,060   | "         | "        | "                 |
| "        | 5  | ... | 38.0            | 38.2   | 39.0   | 48     | 56   | 16           | 16   | "                      | "       | 1,058   | Neutral.  | Trace.   | "                 |
| "        | 6  | ... | 37.4            | 38.3   | 38.8   | 48     | 52   | 16           | 16   | "                      | Clear.  | 1,058   | Acid.     | 1/50     | "                 |
| "        | 7  | ... | 37.4            | 38.1   | 39.0   | 36     | 56   | 16           | 12   | "                      | "       | 1,056   | "         | 1/75     | "                 |
| "        | 8  | ... | 38.0            | 38.4   | 39.0   | 48     | 48   | 16           | 16   | "                      | "       | 1,052   | "         | 1/65     | Trace.            |
| "        | 9  | ... | 37.6            | 38.5   | 38.8   | 36     | 48   | 12           | 12   | "                      | "       | 1,046   | Alkaline. | 1/90     | Nil.              |
| "        | 10 | ... | 38.0            | 38.1   | 38.6   | 44     | 44   | 12           | 12   | "                      | Turbid. | 1,046   | "         | Trace.   | Trace.            |
| "        | 11 | ... | 37.4            | 38.6   | 39.8   | 32     | 52   | 12           | 16   | "                      | "       | 1,042   | Acid.     | 1/80     | Nil.              |
| "        | 12 | ... | 38.6            | 39.5   | 40.4   | 44     | 52   | 12           | 16   | "                      | Clear.  | 1,048   | "         | Nil.     | "                 |
| "        | 13 | ... | 38.2            | 38.2   | 39.0   | 48     | 52   | 12           | 12   | "                      | Turbid. | 1,056   | Neutral.  | Trace.   | Trace.            |
| "        | 14 | ... | 37.7            | 38.4   | 39.0   | 52     | 52   | 16           | 12   | "                      | "       | 1,060   | "         | 1/65     | "                 |
| "        | 15 | ... | 37.8            | 38.2   | 38.5   | 40     | 44   | 16           | 12   | "                      | "       | 1,054   | Acid.     | Trace.   | "                 |
| "        | 16 | ... | 37.5            | 37.7   | 38.7   | 44     | 52   | 12           | 12   | "                      | "       | 1,052   | Alkaline. | 1/52     | Nil.              |
| "        | 17 | ... | 37.8            | 38.2   | 38.7   | 48     | 48   | 16           | 12   | "                      | Clear.  | 1,053   | Acid.     | 1/60     | "                 |
| "        | 18 | ... | 37.7            | 37.7   | 38.6   | 36     | 52   | 12           | 12   | "                      | Turbid. | 1,048   | "         | Trace.   | Trace.            |
| "        | 19 | ... | 38.0            | 38.1   | 38.6   | 40     | 40   | 12           | 12   | "                      | "       | 1,046   | "         | "        | "                 |
| "        | 20 | ... | 37.6            | 38.3   | 38.7   | 40     | 44   | 12           | 16   | "                      | Clear.  | 1,050   | "         | 1/58     | "                 |
| "        | 21 | ... | 37.2            | 38.0   | 38.6   | 36     | 44   | 12           | 12   | "                      | "       | 1,054   | Neutral.  | 1/50     | "                 |
| "        | 22 | ... | 37.2            | 38.3   | 38.5   | 32     | 36   | 12           | 16   | "                      | Turbid. | 1,056   | "         | Trace.   | "                 |
| "        | 23 | ... | 37.1            | 38.2   | 38.6   | 36     | 44   | 12           | 12   | "                      | "       | 1,056   | "         | "        | Nil.              |
| "        | 24 | ... | 37.2            | 38.0   | 38.6   | 32     | 40   | 16           | 12   | "                      | "       | 1,060   | Acid.     | Nil.     | "                 |
| "        | 25 | ... | 37.5            | 38.3   | 38.6   | 32     | 52   | 12           | 16   | "                      | Clear.  | 1,060   | Neutral.  | Trace.   | "                 |
| "        | 26 | ... | 37.3            | 38.3   | 38.5   | 40     | 48   | 12           | 20   | "                      | "       | 1,042   | "         | "        | "                 |
| "        | 27 | ... | 37.7            | 38.3   | 38.7   | 36     | 40   | 12           | 12   | "                      | "       | 1,053   | Acid.     | "        | "                 |
| "        | 28 | ... | 37.7            | 38.3   | 39.1   | 36     | 52   | 12           | 16   | "                      | Turbid. | 1,052   | "         | "        | "                 |
| "        | 29 | ... | 37.6            | 38.3   | 39.3   | 40     | 48   | 16           | 20   | "                      | "       | 1,052   | "         | Nil.     | "                 |
| "        | 30 | ... | 38.4            | 39.3   | 40.0   | 36     | 52   | 16           | 20   | "                      | "       | 1,052   | "         | "        | "                 |
| "        | 31 | ... | 39.2            | 40.1   | 41.1   | 40     | 56   | 16           | 28   | Few.                   | "       | 1,054   | "         | "        | "                 |
| April    | 1  | ... | 38.5            | 39.3   | 40.5   | 40     | 52   | 20           | 24   | "                      | "       | 1,050   | "         | "        | "                 |
| "        | 2  | ... | 39.4            | 40.0   | 39.8   | 48     | 56   | 16           | 32   | Absent.                | "       | 1,056   | "         | "        | "                 |
| "        | 3  | ... | 38.0            | 38.5   | 38.8   | 40     | 52   | 16           | 28   | "                      | "       | 1,056   | "         | "        | "                 |
| "        | 4  | ... | 38.0            | 38.7   | 39.3   | 40     | 52   | 16           | 24   | "                      | "       | 1,058   | "         | "        | "                 |
| "        | 5  | ... | 37.6            | 38.8   | 39.4   | 40     | 60   | 20           | 28   | "                      | "       | 1,050   | Neutral.  | "        | "                 |
| "        | 6  | ... | 37.8            | 38.3   | 39.3   | 44     | 52   | 20           | 24   | "                      | "       | 1,052   | Acid.     | "        | "                 |
| "        | 7  | ... | 38.1            | 38.4   | 39.2   | 48     | 44   | 20           | 20   | "                      | "       | 1,052   | Neutral.  | "        | "                 |
| "        | 8  | ... | 38.0            | 38.4   | 39.2   | 36     | 52   | 16           | 20   | "                      | Clear.  | 1,058   | Acid.     | "        | "                 |
| "        | 9  | ... | 38.0            | 38.5   | 39.5   | 36     | 56   | 16           | 28   | "                      | "       | 1,046   | "         | "        | "                 |
| "        | 10 | ... | 38.4            | 38.3   | 39.1   | 40     | 48   | 20           | 20   | "                      | "       | 1,034   | Alkaline. | "        | "                 |
| "        | 11 | ... | 38.2            | 38.6   | 38.8   | 56     | 40   | 16           | 20   | "                      | Turbid. | 1,054   | Neutral.  | "        | "                 |
| "        | 12 | ... | 38.5            | 39.3   | 38.8   | 40     | 44   | 12           | 12   | "                      | Clear.  | 1,050   | "         | "        | "                 |
| "        | 13 | ... | 38.3            | 38.2   | 38.6   | 48     | 52   | 16           | 16   | "                      | "       | 1,048   | "         | "        | "                 |
| "        | 14 | ... | 37.7            | 38.2   | 38.6   | 48     | 48   | 20           | 20   | "                      | "       | 1,042   | Acid.     | "        | "                 |
| "        | 15 | ... | 38.4            | 39.0   | 39.6   | 44     | 52   | 28           | 16   | "                      | "       | 1,032   | "         | "        | "                 |
| "        | 16 | ... | 39.0            | 39.6   | 39.3   | 44     | 48   | 12           | 20   | "                      | "       | 1,034   | Neutral.  | "        | "                 |
| "        | 17 | ... | 38.1            | 38.5   | 39.2   | 40     | 52   | 16           | 12   | "                      | Turbid. | 1,044   | Acid.     | "        | Trace.            |
| "        | 18 | ... | 38.0            | 38.4   | 39.3   | 40     | 52   | 28           | 28   | "                      | "       | 1,024   | Alkaline. | "        | Nil.              |
| "        | 19 | ... | 37.6            | 38.3   | 39.6   | 40     | 52   | 24           | 48   | "                      | "       | 1,058   | Acid.     | "        | "                 |
| "        | 20 | ... | 38.0            | 38.3   | 39.5   | 40     | 56   | 12           | 48   | "                      | "       | 1,034   | Alkaline. | "        | "                 |
| "        | 21 | ... | 38.0            | 38.6   | 39.7   | 52     | 56   | 20           | 24   | "                      | "       | 1,042   | "         | "        | "                 |
| "        | 22 | ... | 38.0            | 38.4   | 39.3   | 40     | 48   | 12           | 32   | "                      | "       | 1,032   | "         | "        | "                 |
| "        | 23 | ... | 38.4            | 39.3   | 39.6   | 48     | 52   | 16           | 20   | "                      | "       | 1,048   | "         | "        | "                 |
| "        | 24 | ... | 37.4            | 38.5   | 38.7   | 44     | 48   | 12           | 28   | "                      | "       | 1,027   | "         | "        | "                 |
| "        | 25 | ... | 38.8            | 38.7   | 38.3   | 48     | 42   | 16           | 13   | "                      | "       | 1,030   | "         | "        | "                 |
| "        | 26 | ... | 38.0            | 38.3   | 39.1   | 40     | 54   | 16           | 14   | "                      | "       | 1,012   | "         | "        | "                 |
| "        | 27 | ... | 38.2            | 38.3   | 39.3   | 48     | 48   | 16           | 30   | "                      | Clear.  | 1,023   | "         | "        | Trace.            |
| "        | 28 | ... | 37.6            | 38.2   | 38.6   | 40     | 56   | 12           | 12   | "                      | "       | 1,046   | "         | "        | 1/12              |
| "        | 29 | ... | 38.0            | 38.2   | 38.7   | 44     | 44   | 20           | 17   | "                      | Turbid. | 1,028   | "         | "        | Trace.            |
| "        | 30 | ... | 38.0            | 38.2   | 38.5   | 40     | 48   | 16           | 28   | "                      | "       | 1,013   | "         | "        | Nil.              |

| Date.     | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |           |          |                   |
|-----------|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|-----------|----------|-------------------|
|           | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction. | Albumen. | Hippuric<br>Acid. |
| 1893.     |                 |        |        |        |      |              |      |                        |         |         |           |          |                   |
| May 1...  | 38.0            | 38.7   | 38.7   | 52     | 60   | 16           | 32   | Absent.                | Turbid. | 1,014   | Alkaline. | Nil.     | Nil.              |
| " 2...    | 38.3            | 39.8   | 40.0   | 40     | 56   | 20           | 24   | "                      | Clear.  | 1,016   | "         | "        | Trace.            |
| " 3...    | 37.6            | 37.8   | 39.6   | 40     | 52   | 20           | 32   | "                      | "       | 1,035   | "         | "        | "                 |
| " 4...    | 40.0            | 41.0   | 41.4   | 44     | 64   | 20           | 36   | "                      | Turbid. | 1,010   | "         | "        | Nil.              |
| " 5...    | 38.0            | 39.2   | 39.6   | 52     | 56   | 20           | 48   | "                      | "       | 1,021   | "         | "        | "                 |
| " 6...    | 39.0            | 39.6   | 39.8   | 48     | 64   | 16           | 20   | "                      | "       | 1,048   | "         | "        | $\frac{1}{8}$     |
| " 7...    | 38.2            | 38.1   | 39.6   | 44     | 52   | 12           | 24   | "                      | Clear.  | 1,030   | "         | "        | $\frac{1}{8}$     |
| " 8...    | 38.0            | 38.5   | 39.7   | 44     | 60   | 20           | 20   | "                      | "       | 1,018   | Neutral.  | "        | 1/10              |
| " 9...    | 37.8            | 38.0   | 39.3   | 48     | 56   | 16           | 48   | "                      | Turbid. | 1,020   | "         | "        | Trace.            |
| " 10...   | 37.2            | 38.1   | 38.8   | 44     | 52   | 12           | 44   | "                      | Clear.  | 1,029   | Alkaline. | "        | 1/12              |
| " 11...   | 37.5            | 38.5   | 39.0   | 40     | 60   | 16           | 16   | "                      | "       | 1,056   | "         | "        | Nil.              |
| " 12...   | 37.2            | 38.0   | 39.0   | 56     | 60   | 16           | 40   | "                      | "       | 1,040   | "         | "        | "                 |
| " 13...   | 37.4            | 38.2   | 38.6   | 44     | 52   | 20           | 20   | "                      | Clear.  | 1,029   | "         | "        | $\frac{1}{8}$     |
| " 14...   | 37.8            | 39.4   | 38.8   | 48     | 60   | 16           | 20   | "                      | Turbid. | 1,040   | Acid.     | "        | 1/10              |
| " 15...   | 37.8            | 38.2   | 39.4   | 48     | 56   | 20           | 32   | "                      | Clear.  | 1,013   | "         | "        | $\frac{1}{6}$     |
| " 16...   | 38.6            | 39.8   | 40.3   | 64     | 68   | 20           | 20   | "                      | "       | 1,030   | "         | "        | 1/12              |
| " 17...   | 38.4            | 40.4   | 41.3   | 60     | 72   | 16           | 24   | "                      | Turbid. | 1,033   | "         | "        | $\frac{1}{6}$     |
| " 18...   | 38.6            | 39.6   | 39.6   | 56     | 64   | 16           | 32   | "                      | Clear.  | 1,048   | "         | "        | $\frac{1}{4}$     |
| " 19...   | 37.4            | 38.0   | 38.2   | 52     | 56   | 24           | 28   | "                      | "       | 1,018   | "         | "        | $\frac{1}{3}$     |
| " 20...   | 37.2            | 38.4   | 39.0   | 64     | 76   | 16           | 32   | "                      | "       | 1,020   | Alkaline. | "        | 1/10              |
| " 21...   | 37.4            | 37.8   | 38.8   | 60     | 68   | 16           | 24   | "                      | Turbid. | 1,032   | "         | "        | $\frac{1}{3}$     |
| " 22...   | 37.4            | 38.0   | 38.0   | 48     | 68   | 16           | 32   | "                      | Clear.  | 1,024   | "         | "        | Nil.              |
| " 23...   | 37.4            | 37.8   | 38.6   | 52     | 60   | 12           | 20   | "                      | "       | 1,024   | "         | "        | "                 |
| " 24...   | 37.4            | 37.6   | 38.0   | 44     | 52   | 24           | 16   | "                      | Clear.  | 1,022   | Neutral.  | "        | Trace.            |
| " 25...   | 37.0            | 38.3   | 38.4   | 48     | 60   | 20           | 28   | "                      | "       | 1,022   | Acid.     | "        | "                 |
| " 26...   | 37.4            | 38.2   | 38.6   | 48     | 48   | 24           | 20   | "                      | Turbid. | 1,022   | Alkaline. | "        | Nil.              |
| " 27...   | 37.4            | 40.1   | 39.0   | 56     | 56   | 20           | 24   | "                      | Clear.  | 1,036   | Acid.     | "        | Trace.            |
| " 28...   | 37.6            | 38.4   | 36.4   | 48     | 44   | 24           | 12   | "                      | Turbid. | 1,046   | Alkaline. | "        | $\frac{1}{3}$     |
| " 29...   | 39.4            | 39.0   | 39.0   | 56     | 68   | 12           | 20   | "                      | "       | 1,050   | Acid.     | "        | 1/10              |
| " 30...   | 39.2            | 41.0   | 40.2   | 56     | 72   | 16           | 32   | "                      | Clear.  | 1,054   | "         | "        | 1/10              |
| " 31...   | 37.7            | 38.1   | 39.2   | 56     | 64   | 20           | 12   | "                      | Turbid. | 1,056   | "         | "        | $\frac{1}{3}$     |
| June 1... | 38.0            | 39.5   | 38.2   | 56     | 64   | 12           | 20   | "                      | "       | 1,052   | Neutral.  | "        | 1/10              |
| " 2...    | 37.2            | 37.7   | 38.8   | 64     | 72   | 20           | 24   | "                      | "       | 1,054   | Acid.     | "        | $\frac{1}{6}$     |
| " 3...    | 37.7            | 38.3   | 39.3   | 52     | 60   | 16           | 20   | "                      | "       | 1,056   | Alkaline. | "        | $\frac{1}{6}$     |
| " 4...    | 38.1            | 39.6   | 39.0   | 56     | 64   | 28           | 32   | "                      | "       | 1,040   | "         | "        | 1/10              |
| " 5...    | 38.0            | 38.8   | 38.6   | 52     | 64   | 12           | 20   | "                      | "       | 1,030   | "         | "        | Trace.            |
| " 6...    | 37.8            | 38.5   | 39.4   | 52     | 68   | 16           | 28   | "                      | "       | 1,050   | Acid.     | "        | $\frac{1}{3}$     |
| " 7...    | 39.8            | 40.7   | 39.1   | 60     | 56   | 28           | 28   | "                      | Clear.  | 1,052   | "         | "        | $\frac{1}{6}$     |
| " 8...    | 39.0            | 40.3   | 39.5   | 68     | 68   | 24           | 20   | "                      | "       | 1,048   | "         | "        | $\frac{1}{6}$     |
| " 9...    | 38.0            | 38.7   | 38.8   | 44     | 72   | 20           | 20   | "                      | "       | 1,030   | "         | "        | Trace.            |
| " 10...   | 38.0            | 38.8   | 39.2   | 60     | 40   | 20           | 20   | "                      | "       | 1,044   | "         | "        | $\frac{1}{6}$     |
| " 11...   | 40.2            | 40.0   | 39.9   | 36     | 52   | 16           | 28   | Few.                   | "       | 1,024   | "         | "        | Trace             |
| " 12...   | 38.2            | 39.2   | 39.8   | 64     | 72   | 28           | 36   | Absent.                | "       | 1,042   | Alkaline. | "        | 1/10              |
| " 13...   | 38.2            | 39.5   | 38.7   | 56     | 68   | 20           | 20   | "                      | "       | 1,024   | "         | "        | Trace.            |
| " 14...   | 38.1            | 38.3   | 38.6   | 56     | 72   | 28           | 24   | "                      | Turbid. | 1,042   | "         | "        | "                 |
| " 15...   | 37.8            | 38.3   | 38.0   | 52     | 64   | 20           | 16   | "                      | "       | 1,040   | "         | "        | "                 |

A single hæmatozo on of the large variety was observed, although numerous specimens of blood were examined.

|         |      |      |      |    |    |    |    |      |         |       |           |        |        |
|---------|------|------|------|----|----|----|----|------|---------|-------|-----------|--------|--------|
| " 16... | 37.0 | 36.7 | 37.5 | 52 | 68 | 12 | 12 | "    | "       | 1,040 | "         | "      | "      |
| " 17... | 37.7 | 37.8 | 38.3 | 52 | 56 | 12 | 16 | "    | Clear.  | 1,036 | Acid.     | "      | "      |
| " 18... | 37.0 | 36.8 | 38.2 | 48 | 60 | 16 | 16 | "    | Turbid. | 1,030 | Alkaline. | "      | Nil    |
| " 19... | 37.2 | 36.8 | 38.8 | 60 | 64 | 12 | 28 | "    | Clear.  | 1,038 | Acid.     | Trace. | Trace. |
| " 20... | 38.4 | 37.4 | 39.4 | 60 | 60 | 20 | 16 | "    | "       | 1,040 | Alkaline. | Nil.   | 1/6    |
| " 21... | 38.1 | 38.4 | 39.6 | 72 | 76 | 16 | 24 | Few. | "       | 1,030 | "         | Trace. | Nil.   |

Two guinea pigs were inoculated each with 0.5 c. c of blood, the latent period in each case occupied 5 days, and death occurred in 9 and 7 days respectively.

|           |      |      |      |     |    |    |    |         |         |       |           |        |               |
|-----------|------|------|------|-----|----|----|----|---------|---------|-------|-----------|--------|---------------|
| " 22...   | 39.0 | 38.0 | 38.2 | 76  | 60 | 20 | 16 | Absent. | Turbid. | 1,030 | Alkaline. | "      | "             |
| " 23...   | 37.6 | 38.0 | 37.7 | 52  | 72 | 16 | 12 | "       | "       | 1,036 | "         | Nil.   | "             |
| " 24...   | 37.8 | 37.5 | 38.0 | 64  | 76 | 12 | 12 | "       | "       | 1,050 | "         | "      | Trace.        |
| " 25...   | 37.4 | 37.7 | 38.8 | 60  | 72 | 12 | 16 | "       | "       | 1,048 | "         | "      | 1/12          |
| " 26...   | 38.0 | 39.3 | 39.3 | 80  | 84 | 12 | 16 | "       | "       | 1,040 | "         | "      | Trace.        |
| " 27...   | 38.4 | 39.7 | 40.0 | 72  | 92 | 16 | 20 | "       | Clear.  | 1,034 | "         | "      | Nil.          |
| " 28...   | 38.8 | 39.4 | 39.3 | 100 | 92 | 20 | 24 | "       | "       | 1,033 | "         | "      | Trace.        |
| " 29...   | 38.0 | 38.1 | 38.7 | 72  | 56 | 16 | 12 | "       | "       | 1,031 | "         | "      | Nil.          |
| " 30...   | 37.8 | 38.6 | 38.4 | 64  | 60 | 16 | 16 | "       | Turbid. | 1,034 | "         | "      | "             |
| July 1... | 37.6 | 38.6 | 38.1 | 64  | 72 | 16 | 16 | "       | Clear.  | 1,014 | "         | Trace. | "             |
| " 2...    | 37.2 | 38.2 | 38.6 | 64  | 72 | 20 | 28 | "       | "       | 1,040 | Neutral.  | Nil.   | $\frac{1}{3}$ |
| " 3...    | 37.4 | 38.0 | 38.5 | 60  | 64 | 16 | 20 | "       | "       | 1,010 | Alkaline. | Trace. | Nil.          |

A single example of the large hæmatozoon was observed.

|        |      |      |      |    |    |    |    |   |         |       |   |      |      |
|--------|------|------|------|----|----|----|----|---|---------|-------|---|------|------|
| " 4... | 37.6 | 38.0 | 37.4 | 52 | 60 | 16 | 16 | " | Turbid. | 1,028 | " | Nil. | 1/6  |
| " 5... | 37.6 | 38.3 | 38.4 | 56 | 60 | 12 | 16 | " | Clear.  | 1,040 | " | "    | 1/10 |

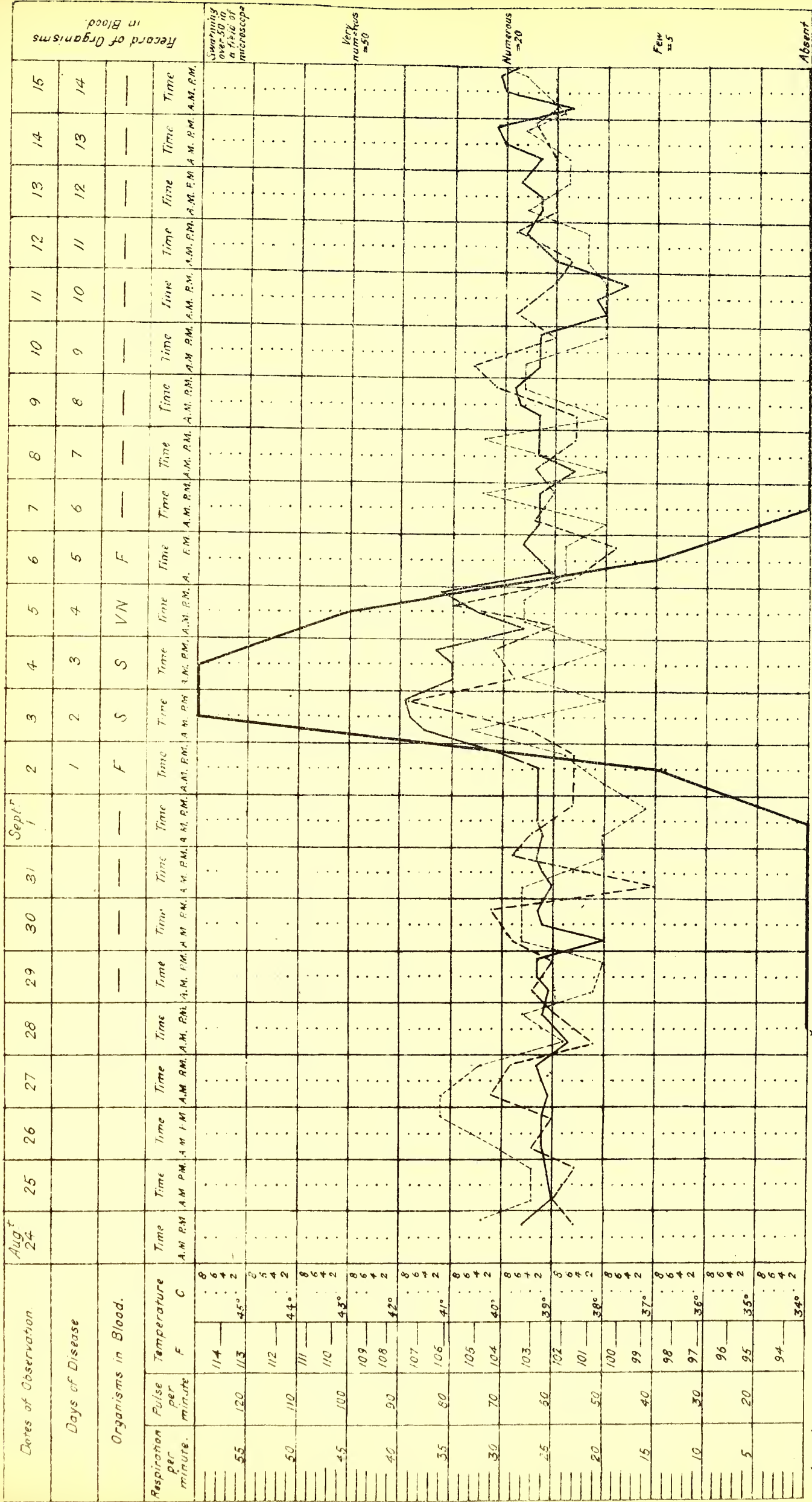


| Date.  |    |     | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |           |          |                   |
|--|----|-----|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|-----------|----------|-------------------|
|  |    |     | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction. | Albumen. | Hippuric<br>Acid. |
| 1893.  |    |     |                 |        |        |        |      |              |      |                        |         |         |           |          |                   |
| July   | 6  | ... | 37.8            | 38.4   | 38.0   | 52     | 72   | 12           | 12   | Absent                 | Clear.  | 1.043   | Alkaline. | Nil.     | Trace.            |
| "  | 7  | ... | 38.0            | 38.6   | 39.5   | 60     | 80   | 16           | 12   | "                      | Turbid. | 1.016   | "         | "        | Nil.              |
| "  | 8  | ... | 39.4            | 39.8   | 40.0   | 72     | 72   | 16           | 16   | "                      | "       | 1.030   | "         | "        | Trace.            |
| "  | 9  | ... | 37.6            | 37.9   | 38.8   | 56     | 68   | 16           | 16   | "                      | Clear.  | 1.012   | "         | "        | Nil.              |
| "  | 10 | ... | 37.6            | 37.9   | 38.0   | 56     | 64   | 12           | 16   | "                      | Turbid. | 1.054   | "         | "        | 1/6               |
| "  | 11 | ... | 37.4            | 37.7   | 38.6   | 48     | 52   | 12           | 16   | "                      | "       | 1.056   | "         | "        | 1/14              |
| "  | 12 | ... | 38.3            | 39.0   | 39.0   | 64     | 64   | 16           | 16   | "                      | "       | 1.054   | "         | "        | Nil.              |
| "  | 13 | ... | 38.4            | 39.2   | 39.2   | 64     | 68   | 16           | 12   | "                      | "       | 1.060   | Neutral.  | "        | 1/6               |
| "  | 14 | ... | 38.2            | 38.4   | 38.3   | 56     | 64   | 16           | 12   | "                      | "       | 1.054   | Alkaline. | "        | 1/4               |
| "  | 15 | ... | 37.6            | 38.2   | 38.2   | 60     | 52   | 16           | 12   | "                      | "       | 1.054   | "         | "        | Nil.              |
| "  | 16 | ... | 37.4            | 38.2   | 38.3   | 52     | 60   | 16           | 12   | "                      | Clear.  | 1.050   | "         | "        | 1/8               |
| "  | 17 | ... | 37.4            | 37.8   | 38.2   | 52     | 60   | 12           | 12   | "                      | "       | 1.030   | "         | "        | 1/8               |
| "  | 18 | ... | 37.5            | 37.4   | 38.2   | 52     | 56   | 16           | 16   | "                      | "       | 1.024   | "         | "        | 1/10              |
| "  | 19 | ... | 38.0            | 38.4   | 38.4   | 60     | 56   | 16           | 12   | "                      | Turbid. | 1.042   | "         | "        | 1/8               |
| "  | 20 | ... | 37.8            | 37.9   | 38.5   | 64     | 64   | 16           | 12   | "                      | Brown.  | 1.027   | "         | "        | Trace.            |
| "  | 21 | ... | 37.2            | 37.7   | 38.0   | 54     | 54   | 13           | 12   | "                      | Red.    | 1.037   | "         | Trace.   | 1/14              |
| "  | 22 | ... | 37.8            | 37.8   | 37.7   | 52     | 54   | 16           | 12   | "                      | Turbid. | 1.030   | Neutral.  | "        | Trace.            |
| "  | 23 | ... | 37.7            | 38.1   | 38.2   | 48     | 64   | 16           | 16   | "                      | Clear.  | 1.043   | Alkaline. | Nil.     | "                 |
| "  | 24 | ... | 37.7            | 38.0   | 38.0   | 52     | 52   | 16           | 16   | "                      | Turbid. | 1.047   | "         | "        | "                 |
| "  | 25 | ... | 37.2            | 38.2   | 38.6   | 48     | 60   | 12           | 12   | "                      | Clear.  | 1.058   | "         | "        | 1/8               |
| "  | 26 | ... | 38.4            | 38.0   | 38.6   | 64     | 64   | 12           | 16   | "                      | Turbid. | 1.042   | "         | "        | "                 |
| "  | 27 | ... | 38.0            | 38.2   | 38.4   | 56     | 68   | 16           | 16   | "                      | Clear.  | 1.034   | "         | "        | Nil.              |
| "  | 28 | ... | 37.8            | 38.2   | 38.6   | 68     | 68   | 16           | 12   | "                      | "       | 1.040   | "         | "        | "                 |
| "  | 29 | ... | 38.0            | 38.2   | 38.8   | 56     | 76   | 16           | 20   | "                      | "       | 1.037   | "         | "        | "                 |
| "  | 30 | ... | 37.8            | 38.4   | 37.6   | 56     | 60   | 12           | 16   | "                      | Turbid. | 1.032   | "         | Trace.   | Nil.              |
| "  | 31 | ... | 37.6            | 38.2   | 38.5   | 52     | 60   | 12           | 16   | "                      | "       | 1.040   | "         | Nil.     | "                 |
| August   | 1  | ... | 37.8            | 38.0   | 38.5   | 56     | 64   | 16           | 16   | "                      | "       | 1.050   | "         | "        | "                 |
| "  | 2  | ... | 38.4            | 37.8   | 38.2   | 56     | 44   | 16           | 16   | "                      | "       | 1.030   | "         | "        | 1/4               |
| "  | 3  | ... | 37.6            | 38.0   | 37.4   | 52     | 84   | 12           | 8    | "                      | "       | 1.042   | "         | "        | 1/24              |
| "  | 4  | ... | 38.2            | 38.2   | 38.6   | 56     | 60   | 16           | 16   | "                      | Clear.  | 1.033   | "         | "        | "                 |
| "  | 5  | ... | 37.8            | 38.2   | 37.6   | 52     | 68   | 12           | 16   | "                      | Turbid. | 1.034   | "         | "        | "                 |
| "  | 6  | ... | 37.8            | 38.0   | 38.5   | 52     | 56   | 12           | 16   | "                      | "       | 1.038   | "         | "        | Trace.            |
| "  | 7  | ... | 37.0            | 37.9   | 38.0   | 48     | 52   | 14           | 12   | "                      | "       | 1.036   | "         | "        | 1/8               |
| "  | 8  | ... | 37.0            | 37.8   | 37.6   | 48     | 60   | 12           | 12   | "                      | "       | 1.044   | "         | "        | Trace.            |
| "  | 9  | ... | 37.6            | 37.4   | 37.8   | 48     | 60   | 12           | 16   | "                      | "       | 1.042   | "         | "        | "                 |
| "  | 10 | ... | 37.8            | 38.0   | 38.5   | 64     | 60   | 12           | 20   | "                      | "       | 1.040   | "         | "        | "                 |
| "  | 11 | ... | 37.6            | 38.0   | 38.4   | 52     | 60   | 16           | 16   | "                      | "       | 1.036   | "         | "        | Nil.              |
| "  | 12 | ... | 37.8            | 38.0   | 38.5   | 52     | 56   | 16           | 16   | "                      | Red.    | 1.038   | "         | "        | "                 |
| "  | 13 | ... | 37.8            | 38.0   | 38.3   | 44     | 52   | 12           | 16   | "                      | Turbid. | 1.033   | "         | "        | "                 |
| "  | 14 | ... | 37.6            | 37.6   | 38.4   | 48     | 48   | 16           | 16   | "                      | "       | 1.050   | "         | "        | "                 |
| "  | 15 | ... | 37.6            | 37.6   | 37.4   | 52     | 64   | 12           | 16   | "                      | "       | 1.020   | "         | "        | "                 |
| "  | 16 | ... | 38.2            | 38.4   | 39.3   | 64     | 72   | 16           | 16   | "                      | "       | 1.024   | "         | "        | "                 |
| "  | 17 | ... | 37.8            | 37.7   | 38.6   | 68     | 68   | 16           | 24   | "                      | "       | 1.040   | "         | "        | "                 |
| "  | 18 | ... | 38.2            | 38.0   | 38.3   | 64     | 60   | 20           | 14   | "                      | Clear.  | 1.036   | "         | "        | "                 |
| "  | 19 | ... | 38.6            | 38.2   | 38.6   | 88     | 84   | 42           | 20   | "                      | "       | 1.028   | "         | "        | "                 |
| "  | 20 | ... | 37.6            | 38.3   | 38.4   | 84     | 80   | 20           | 28   | "                      | Turbid. | 1.042   | "         | "        | "                 |
| "  | 21 | ... | 38.2            | 37.8   | 38.4   | 76     | 64   | 20           | 20   | "                      | "       | 1.020   | "         | "        | "                 |
| "  | 22 | ... | 37.2            | 37.6   | 38.2   | 56     | 76   | 16           | 20   | "                      | "       | 1.040   | "         | "        | Trace.            |
| "  | 23 | ... | 37.4            | 38.0   | 39.3   | 64     | 76   | 20           | 16   | "                      | "       | 1.042   | "         | Trace.   | Nil.              |
| "  | 24 | ... | 38.8            | 39.3   | 39.9   | 76     | 104  | 24           | 24   | "                      | Clear.  | 1.044   | "         | Nil.     | Trace.            |
| "  | 25 | ... | 38.8            | 39.4   | 39.4   | 84     | 76   | 28           | 24   | "                      | Turbid. | 1.036   | "         | "        | 1/16              |
| "  | 26 | ... | 37.6            | 38.4   | 38.5   | 64     | 72   | 20           | 28   | "                      | Clear.  | 1.040   | "         | Trace.   | Nil.              |
| "  | 27 | ... | 38.0            | 37.7   | 38.0   | 68     | 80   | 16           | 20   | "                      | "       | 1.036   | "         | Nil.     | 1/8               |
| "  | 28 | ... | 37.6            | 37.6   | 38.2   | 56     | 56   | 16           | 16   | "                      | Turbid. | 1.030   | "         | "        | Nil.              |
| "  | 29 | ... | 37.7            | 38.4   | 38.8   | 56     | 76   | 20           | 12   | "                      | "       | 1.014   | "         | "        | "                 |
| "  | 30 | ... | 37.3            | 38.7   | 38.6   | 64     | 56   | 16           | 15   | "                      | "       | 1.024   | "         | "        | Trace.            |
| "  | 31 | ... | 38.3            | 38.6   | 39.0   | 60     | 64   | 20           | 20   | "                      | "       | 1.032   | "         | "        | 1/12              |
| September  | 1  | ... | 38.3            | 38.5   | 38.8   | 64     | 64   | 16           | 24   | "                      | Clear.  | 1.020   | "         | "        | Nil.              |
| "  | 2  | ... | 38.1            | 38.1   | 37.8   | 44     | 56   | 12           | 12   | "                      | Turbid. | 1.025   | "         | "        | "                 |
| A single example of the large hæmatozoon was observed. |    |     |                 |        |        |        |      |              |      |                        |         |         |           |          |                   |
| "  | 3  | ... | 37.2            | 38.0   | 38.3   | 48     | 56   | 12           | 12   | "                      | Clear.  | 1.046   | "         | Trace.   | "                 |
| "  | 4  | ... | 37.2            | 38.2   | 38.2   | 44     | 52   | 12           | 12   | "                      | "       | 1.040   | "         | "        | "                 |
| "  | 5  | ... | 38.0            | 38.1   | 39.5   | 44     | 60   | 12           | 16   | "                      | Turbid. | 1.038   | "         | "        | Trace.            |
| "  | 6  | ... | 38.0            | 38.5   | 38.8   | 72     | 68   | 28           | 16   | "                      | "       | 1.044   | "         | "        | 1/14              |
| "  | 7  | ... | 38.1            | 38.6   | 37.8   | 64     | 60   | 20           | 16   | "                      | "       | 1.052   | "         | "        | Nil.              |
| "  | 8  | ... | 37.3            | 38.0   | 38.2   | 52     | 60   | 16           | 12   | "                      | Clear.  | 1.034   | "         | "        | Trace.            |
| "  | 9  | ... | 37.6            | 38.6   | 38.2   | 64     | 80   | 20           | 16   | "                      | "       | 1.042   | "         | Nil.     | 1/4               |
| "  | 10 | ... | 38.0            | 39.5   | 37.4   | 60     | 56   | 20           | 16   | "                      | "       | 1.035   | "         | Trace.   | Trace.            |
| "  | 11 | ... | 38.6            | 38.8   | 39.6   | 68     | 72   | 20           | 36   | "                      | "       | 1.026   | "         | "        | Nil.              |
| "  | 12 | ... | 39.0            | 39.4   | 39.5   | 68     | 76   | 28           | 32   | "                      | Turbid. | 1.016   | "         | "        | "                 |
| "  | 13 | ... | 38.6            | 38.6   | 38.6   | 68     | 80   | 32           | 16   | "                      | Clear.  | 1.030   | "         | 1/14     | Trace.            |



RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

Cow \_\_\_\_\_ Disease, Rat Surra Through Donkey \_\_\_\_\_ Date of Inoculation, 28.8.92 \_\_\_\_\_ Result, \_\_\_\_\_ Date of Result, \_\_\_\_\_ Register No. I \_\_\_\_\_ Age, 3 Years \_\_\_\_\_ Sex, \_\_\_\_\_ Colour, \_\_\_\_\_



Hamatozoan Curve \_\_\_\_\_  
Temperature .....  
Pulse .....  
Respiration .....

Drawn & Lined: Govt. Photoduplication Office, Pondicherry.

\* Inoculated Subcutaneously with 1.0 cc of blood containing very numerous hamatozoa from Jugular vein of Donkey No. II



RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

Cow \_\_\_\_\_ Colour, \_\_\_\_\_  
Disease, \_\_\_\_\_ Age, \_\_\_\_\_ Sex, \_\_\_\_\_  
Date of \_\_\_\_\_ Date of Result, \_\_\_\_\_ Register No. I \_\_\_\_\_

| Dates of Observation.  |                  | Sept 16       |               | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | Oct 1 | 2    | 3    | 4    | 5    | 6    | 7    | 8    |
|------------------------|------------------|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|
| Days of Disease        |                  | 15            | 16            | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31    |      |      |      |      |      |      |      |
| Organisms in Blood.    |                  |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
| Respiration per minute | Pulse per minute | Temperature F | Temperature C | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time  | Time | Time | Time | Time | Time | Time | Time |
|                        |                  | 114           | 43°           | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
| 55                     | 120              | 113           | 43°           | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
| 50                     | 110              | 112           | 44°           | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
| 45                     | 100              | 111           |               | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
|                        |                  | 110           | 43°           | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
| 40                     | 90               | 109           |               | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
|                        |                  | 108           | 42°           | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
| 35                     | 80               | 107           |               | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
|                        |                  | 106           | 41°           | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
| 30                     | 70               | 105           |               | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
|                        |                  | 104           | 40°           | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
| 25                     | 60               | 103           |               | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
|                        |                  | 102           | 39°           | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
| 20                     | 50               | 101           |               | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
|                        |                  | 100           | 38°           | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
| 15                     | 40               | 99            |               | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
|                        |                  | 98            | 37°           | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
| 10                     | 30               | 97            |               | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
|                        |                  | 96            | 36°           | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
| 5                      | 20               | 95            |               | 8    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
|                        |                  | 94            | 35°           | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |
|                        |                  |               | 34°           | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |

(5.415)

Hematozoan Curve \_\_\_\_\_ Pulse \_\_\_\_\_  
Temperature \_\_\_\_\_ Respiration \_\_\_\_\_  
Drawn & Litho. Govt. Photodup. Office, Poona 1893.





Cow

Disease

Age

Sex

Colour

Register No. 1

| Dates of Observation.  |                  | Oct 9         | 10            | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   |
|------------------------|------------------|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Days of Disease        |                  | 38            | 39            | 40   | 41   | 42   | 43   | 44   | 45   | 46   | 47   | 48   | 49   | 50   | 51   | 52   | 53   | 54   | 55   | 56   | 57   | 58   | 59   | 60   |
| Organisms in Blood.    |                  |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Respiration per minute | Pulse per minute | Temperature F | Temperature C | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |
|                        |                  | 114           | 45°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 55                     | 120              | 113           | 45°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 50                     | 110              | 112           | 44°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 45                     | 100              | 111           | 43°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 40                     | 90               | 109           | 42°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 35                     | 80               | 107           | 41°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 30                     | 70               | 106           | 40°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 25                     | 60               | 105           | 39°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 20                     | 50               | 104           | 38°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 15                     | 40               | 103           | 37°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 10                     | 30               | 102           | 36°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 5                      | 20               | 101           | 35°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 100           | 34°           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 99            |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 98            |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 97            |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 96            |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 95            |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 94            |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Swarming over 50 in a field of microscope

Very numerous = 50

Numerous = 20

Few = 5

Absent

Haematocrit Curve

Temperature

Pulse

Respiration





Cow

Colour

Sex

Age

Result

Date of

Disease

Register No. I

Date of Result

Result

Date of

Disease

| Dates of Observation.   |                   | Nov 1         | 2             | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10        | 11        | 12        | 13        | 14        | 15        | 16        | 17        | 18        | 19        | 20        | 21        | 22        | 23        |
|-------------------------|-------------------|---------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Days of Disease         |                   | 61            | 62            | 63        | 64        | 65        | 66        | 67        | 68        | 69        | 70        | 71        | 72        | 73        | 74        | 75        | 76        | 77        | 78        | 79        | 80        | 81        | 82        | 83        |
| Organisms in Blood.     |                   | F             | —             | —         | —         | —         | —         | X         | —         | —         | —         | —         | —         | —         | —         | —         | —         | —         | —         | —         | F         | —         | —         | —         |
| Respiration per minute. | Pulse per minute. | Temperature F | Temperature C | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      | Time      |
| 55                      | 120               | 114           | 43°           | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. | A.M. P.M. |
| 50                      | 110               | 112           | 44°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 45                      | 100               | 111           | 45°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 40                      | 90                | 108           | 42°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 35                      | 80                | 106           | 41°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 30                      | 70                | 104           | 40°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 25                      | 60                | 103           | 39°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 20                      | 50                | 101           | 38°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 15                      | 40                | 99            | 37°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 10                      | 30                | 97            | 36°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 5                       | 20                | 95            | 35°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                         |                   | 94            | 34°           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |

Haematocrit Curve —————  
Temperature.....

Drawn & Litho: Govt. Photodup. Office, Poona 1893.

Pulse.....  
Respiration.....

X A very large haematocrit was seen, four times the length of an ordinary Surra haematocrit exhibiting similar shape and movements, and provided with Collarette.



Cow

Disease

Age

Date of Result

Sex

Result

Colour

Register No

| Dates of Observation   |                  | Nov 24        | 25  | 26   | 27   | 28   | 29   | 30   | Dec 1 | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16  |
|------------------------|------------------|---------------|-----|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|
| Days of Disease        |                  | 84            | 85  | 86   | 87   | 88   | 89   | 90   | 91    | 92   | 93   | 94   | 95   | 96   | 97   | 98   | 99   | 100  | 101  | 102  | 103  | 104  | 105  | 106 |
| Organisms in Blood     |                  |               |     |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      | F    | F    |      |      |     |
| Respiration per minute | Pulse per minute | Temperature F | C   | Time | Time | Time | Time | Time | Time  | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |     |
| 55                     | 120              | 114           | 45° | A.M. | P.M. | A.M. | P.M. | A.M. | P.M.  | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |     |
| 50                     | 110              | 112           | 44° |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| 45                     | 100              | 111           | 43° |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| 40                     | 90               | 109           | 42° |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| 35                     | 80               | 107           | 41° |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| 30                     | 70               | 105           | 40° |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| 25                     | 60               | 103           | 39° |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| 20                     | 50               | 102           | 38° |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| 15                     | 40               | 100           | 37° |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| 10                     | 30               | 98            | 36° |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| 5                      | 20               | 96            | 35° |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
|                        |                  | 94            | 34° |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |

Swarming over 50 in a field of microscope

Very numerous  $\geq 50$

Numerous  $\approx 20$

Few  $\approx 5$

Absent

Haematocrit Curve

Temperature

Pulse

Respiration

(5.415)

Drawn & Litho: Govt. Photodupl. Office, Poona 1893.





Cow

Disease,

Age,

Sex,

Colour,

Date of

Date of Result,

Register No 7

| Dates of Observation.   |                   | Decr 17       | 18            | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 1893 Jan. 1 | 2    | 3    | 4    | 5    | 6    | 7    | 8    |
|-------------------------|-------------------|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------------|------|------|------|------|------|------|------|
| Days of Disease         |                   | 107           | 108           | 109  | 110  | 111  | 112  | 113  | 114  | 115  | 116  | 117  | 118  | 119  | 120  | 121  | 122         | 123  | 124  | 125  | 126  | 127  | 128  | 129  |
| Organisms in Blood.     |                   | ---           | ---           | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---         | ---  | ---  | ---  | ---  | ---  | ---  | ---  |
| Respiration per minute. | Pulse per minute. | Temperature F | Temperature C | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time        | Time | Time | Time | Time | Time | Time | Time |
| 55                      | 120               | 114           | 42°           | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M.        | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. |
| 50                      | 110               | 112           | 44°           |      |      |      |      |      |      |      |      |      |      |      |      |      |             |      |      |      |      |      |      |      |
| 45                      | 100               | 111           | 43°           |      |      |      |      |      |      |      |      |      |      |      |      |      |             |      |      |      |      |      |      |      |
| 40                      | 90                | 109           | 42°           |      |      |      |      |      |      |      |      |      |      |      |      |      |             |      |      |      |      |      |      |      |
| 35                      | 80                | 107           | 41°           |      |      |      |      |      |      |      |      |      |      |      |      |      |             |      |      |      |      |      |      |      |
| 30                      | 70                | 105           | 40°           |      |      |      |      |      |      |      |      |      |      |      |      |      |             |      |      |      |      |      |      |      |
| 25                      | 60                | 103           | 39°           |      |      |      |      |      |      |      |      |      |      |      |      |      |             |      |      |      |      |      |      |      |
| 20                      | 50                | 101           | 38°           |      |      |      |      |      |      |      |      |      |      |      |      |      |             |      |      |      |      |      |      |      |
| 15                      | 40                | 99            | 37°           |      |      |      |      |      |      |      |      |      |      |      |      |      |             |      |      |      |      |      |      |      |
| 10                      | 30                | 97            | 36°           |      |      |      |      |      |      |      |      |      |      |      |      |      |             |      |      |      |      |      |      |      |
| 5                       | 20                | 95            | 35°           |      |      |      |      |      |      |      |      |      |      |      |      |      |             |      |      |      |      |      |      |      |
|                         |                   | 94            | 34°           |      |      |      |      |      |      |      |      |      |      |      |      |      |             |      |      |      |      |      |      |      |

Swarming over 50 in a field of microscope

Very numerous = 50

Numerous = 20

Few = 5

Absent

Hgmatozoan Curve

Temperature

Pulse

Respiration





| Date.     | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |           |          |                   |        |        |
|-----------|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|-----------|----------|-------------------|--------|--------|
|           | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction. | Albumen. | Hippuric<br>Acid. |        |        |
| 1893.     |                 |        |        |        |      |              |      |                        |         |         |           |          |                   |        |        |
| September | 14              | ...    | 38.0   | 38.8   | 38.3 | 52           | 60   | 16                     | 24      | Absent. | Clear.    | 1,034    | Alkaline.         | Trace. | Nil.   |
| "         | 15              | ...    | 38.1   | 38.2   | 38.7 | 52           | 64   | 20                     | 20      | "       | Turbid.   | 1,028    | "                 | Nil.   | 1/12   |
| "         | 16              | ...    | 38.2   | 39.0   | 39.2 | 64           | 64   | 40                     | 24      | "       | "         | 1,020    | "                 | Trace. | Nil.   |
| "         | 17              | ...    | 38.6   | 40.0   | 38.6 | 52           | 68   | 12                     | 24      | "       | Clear.    | 1,020    | "                 | "      | "      |
| "         | 18              | ...    | 39.4   | 39.7   | 39.8 | 64           | 78   | 24                     | 30      | "       | Turbid.   | 1,034    | "                 | "      | "      |
| "         | 19              | ...    | 38.3   | 38.6   | 39.0 | 56           | 72   | 24                     | 24      | "       | "         | 1,038    | "                 | "      | 1/10   |
| "         | 20              | ...    | 38.7   | 38.8   | 39.4 | 68           | 60   | 16                     | 32      | "       | "         | 1,022    | "                 | "      | Nil.   |
| "         | 21              | ...    | 37.8   | 39.2   | 38.8 | 56           | 60   | 20                     | 32      | "       | Clear.    | 1,024    | "                 | 1/28   | "      |
| "         | 22              | ...    | 38.8   | 38.0   | 38.2 | 64           | 84   | 20                     | 32      | "       | Turbid.   | 1,026    | Neutral.          | Trace. | Trace. |
| "         | 23              | ...    | 38.3   | 38.8   | 39.0 | 60           | 56   | 36                     | 24      | "       | "         | 1,041    | "                 | "      | "      |
| "         | 24              | ...    | 38.6   | 38.2   | 39.3 | 72           | 68   | 20                     | 28      | "       | Clear.    | 1,036    | "                 | "      | Nil.   |
| "         | 25              | ...    | 38.4   | 38.6   | 38.8 | 64           | 64   | 36                     | 24      | "       | Turbid.   | 1,035    | Acid.             | "      | 1/8    |
| "         | 26              | ...    | 38.2   | 38.2   | 38.8 | 68           | 64   | 20                     | 24      | "       | Clear.    | 1,040    | Alkaline.         | "      | 1/6    |
| "         | 27              | ...    | 38.7   | 38.6   | 39.2 | 80           | 64   | 32                     | 36      | "       | "         | 1,034    | "                 | "      | 1/10   |
| "         | 28              | ...    | 38.6   | 38.3   | 38.8 | 76           | 56   | 24                     | 24      | "       | Turbid.   | 1,040    | "                 | "      | Nil.   |
| "         | 29              | ...    | 38.2   | 38.2   | 39.4 | 44           | 72   | 24                     | 28      | "       | Clear.    | 1,020    | "                 | "      | "      |
| "         | 30              | ...    | 38.2   | 38.4   | 38.3 | 60           | 56   | 28                     | 24      | "       | "         | 1,036    | "                 | 1/14   | Trace. |
| October   | 1               | ...    | 38.0   | 37.9   | 38.7 | 60           | 68   | 24                     | 32      | "       | Turbid.   | 1,040    | "                 | Trace. | Nil.   |
| "         | 2               | ...    | 38.0   | 38.3   | 38.2 | 52           | 64   | 24                     | 16      | "       | "         | 1,046    | "                 | "      | "      |
| "         | 3               | ...    | 37.8   | 38.2   | 38.2 | 52           | 52   | 24                     | 16      | "       | Clear.    | 1,044    | "                 | Nil.   | "      |
| "         | 4               | ...    | 37.6   | 37.8   | 38.1 | 48           | 56   | 16                     | 16      | "       | Turbid.   | 1,050    | "                 | "      | "      |
| "         | 5               | ...    | 37.8   | 38.0   | 38.4 | 60           | 56   | 20                     | 24      | "       | "         | 1,054    | "                 | Trace. | "      |
| "         | 6               | ...    | 37.6   | 38.0   | 38.0 | 48           | 56   | 20                     | 16      | "       | "         | 1,050    | "                 | Nil.   | 1/4    |
| "         | 7               | ...    | 38.2   | 38.0   | 38.5 | 56           | 60   | 20                     | 16      | "       | "         | 1,052    | "                 | "      | "      |
| "         | 8               | ...    | 38.8   | 39.0   | 39.3 | 56           | 60   | 12                     | 16      | "       | Clear.    | 1,050    | "                 | "      | 1/3    |
| "         | 9               | ...    | 39.4   | 39.4   | 39.5 | 64           | 72   | 24                     | 32      | "       | Turbid.   | 1,052    | "                 | "      | 1/4    |
| "         | 10              | ...    | 38.2   | 38.6   | 38.8 | 48           | 60   | 12                     | 16      | "       | "         | 1,024    | "                 | "      | 1/12   |
| "         | 11              | ...    | 37.6   | 37.8   | 37.8 | 52           | 52   | 20                     | 16      | "       | Clear.    | 1,050    | "                 | "      | 1/3    |
| "         | 12              | ...    | 37.8   | 38.2   | 38.2 | 56           | 64   | 16                     | 20      | "       | Turbid.   | 1,050    | "                 | "      | 1/4    |
| "         | 13              | ...    | 37.6   | 38.0   | 38.1 | 52           | 60   | 16                     | 16      | "       | "         | 1,034    | "                 | "      | 1/10   |
| "         | 14              | ...    | 37.6   | 37.6   | 38.2 | 52           | 60   | 24                     | 20      | "       | "         | 1,058    | "                 | Trace. | 1/4    |
| "         | 15              | ...    | 37.2   | 37.2   | 38.2 | 44           | 56   | 16                     | 12      | "       | Clear.    | 1,046    | "                 | Nil.   | 1/4    |
| "         | 16              | ...    | 37.8   | 37.8   | 38.6 | 52           | 56   | 16                     | 20      | "       | "         | 1,030    | Acid.             | "      | 1/6    |
| "         | 17              | ...    | 37.8   | 37.6   | 39.0 | 52           | 56   | 12                     | 16      | "       | "         | 1,043    | Alkaline.         | "      | 1/6    |
| "         | 18              | ...    | 38.1   | 39.4   | 40.2 | 64           | 56   | 12                     | 12      | "       | "         | 1,052    | "                 | "      | 1/4    |
| "         | 19              | ...    | 38.4   | 39.4   | 39.6 | 56           | 56   | 16                     | 20      | "       | "         | 1,054    | "                 | "      | 1/4    |
| "         | 20              | ...    | 39.2   | 39.2   | 40.3 | 52           | 64   | 16                     | 12      | "       | "         | 1,042    | "                 | "      | 1/8    |
| "         | 21              | ...    | 39.2   | 38.9   | 39.7 | 60           | 60   | 12                     | 12      | "       | "         | 1,046    | "                 | "      | 1/10   |
| "         | 22              | ...    | 39.2   | 39.8   | 39.8 | 52           | 64   | 12                     | 20      | "       | Turbid.   | 1,050    | "                 | "      | 1/6    |
| "         | 23              | ...    | 37.2   | 37.4   | 38.2 | 64           | 56   | 12                     | 16      | "       | Clear.    | 1,032    | "                 | Trace. | 1/12   |
| "         | 24              | ...    | 37.0   | 37.8   | 38.4 | 48           | 52   | 12                     | 16      | "       | "         | 1,042    | "                 | Nil.   | 1/6    |
| "         | 25              | ...    | 37.2   | 37.6   | 38.8 | 58           | 60   | 12                     | 16      | "       | "         | 1,032    | "                 | "      | 1/12   |
| "         | 26              | ...    | 37.0   | 37.7   | 38.6 | 52           | 80   | 12                     | 16      | "       | "         | 1,026    | "                 | Trace. | Nil.   |
| "         | 27              | ...    | 37.0   | 39.2   | 39.0 | 52           | 60   | 16                     | 20      | "       | "         | 1,044    | "                 | Nil.   | 1/6    |
| "         | 28              | ...    | 39.0   | 39.6   | 40.2 | 64           | 68   | 16                     | 20      | Few.    | Turbid.   | 1,038    | "                 | Trace. | 1/8    |
| "         | 29              | ...    | 40.1   | 40.8   | 41.4 | 52           | 72   | 20                     | 32      | "       | Clear.    | 1,035    | "                 | "      | 1/10   |
| "         | 30              | ...    | 39.2   | 39.6   | 40.2 | 64           | 68   | 16                     | 20      | Absent. | Turbid.   | 1,034    | "                 | Nil.   | 1/4    |
| "         | 31              | ...    | 37.2   | 38.0   | 39.0 | 52           | 76   | 16                     | 16      | "       | Clear.    | 1,040    | "                 | Trace. | 1/16   |
| November  | 1               | ...    | 37.4   | 38.4   | 38.3 | 72           | 52   | 12                     | 16      | "       | "         | 1,044    | "                 | "      | 1/8    |
| "         | 2               | ...    | 37.2   | 38.3   | 38.8 | 52           | 68   | 16                     | 20      | "       | "         | 1,044    | "                 | Nil.   | 1/12   |
| "         | 3               | ...    | 37.6   | 37.6   | 38.8 | 64           | 76   | 16                     | 16      | "       | Clear.    | 1,042    | "                 | Trace. | Trace. |
| "         | 4               | ...    | 37.5   | 38.0   | 38.6 | 80           | 80   | 20                     | 16      | "       | "         | 1,044    | "                 | Nil.   | Nil.   |
| "         | 5               | ...    | 38.0   | 37.9   | 38.8 | 104          | 84   | 12                     | 20      | "       | Turbid.   | 1,046    | "                 | Trace. | 1/15   |
| "         | 6               | ...    | 37.8   | 37.8   | 38.4 | 80           | 52   | 16                     | 16      | "       | Clear.    | 1,028    | "                 | "      | Trace. |
| "         | 7               | ...    | 37.7   | 38.1   | 38.2 | 72           | 64   | 16                     | 16      | "       | "         | 1,022    | "                 | Nil.   | "      |
| "         | 8               | ...    | 37.6   | 38.1   | 38.2 | 60           | 64   | 16                     | 16      | "       | "         | 1,040    | "                 | "      | 1/8    |
| "         | 9               | ...    | 37.6   | 37.8   | 38.6 | 60           | 68   | 20                     | 20      | "       | Turbid.   | 1,040    | "                 | "      | 1/14   |

Observations of temperature, pulse and respiration, condition of blood, together with the examination of the urine were continued daily for a further period of two hundred and three (203) days, but the Surra organisms did not re-appear in the blood.

## GUINEA PIG.

28th October 1893. Inoculated subcutaneously, at 1.30 P.M. with 0.3 c.c. of blood containing few hæmatozoa, taken from the Cow No. 1.

| Month and Date. |        | Examination of Blood. | Temperature °C. |      | Month and Date. |        | Examination of Blood.  | Temperature °C. |      |
|-----------------|--------|-----------------------|-----------------|------|-----------------|--------|------------------------|-----------------|------|
|                 |        |                       | A.M.            | P.M. |                 |        |                        | A.M.            | P.M. |
| 1893.           |        |                       |                 |      | 1893.           |        |                        |                 |      |
| October         | 28 ... | Inoculated ...        | ...             | 39.0 | December        | 8 ...  | Hæmatozoa numerous ... | 38.2            | 38.8 |
| "               | 29 ... | Hæmatozoa absent ...  | 38.0            | 39.2 | "               | 9 ...  | Do. few ...            | 38.0            | 38.4 |
| "               | 30 ... | Do. do. ...           | 37.8            | 39.4 | "               | 10 ... | Do. do. ...            | 38.4            | 38.2 |
| "               | 31 ... | Do. do. ...           | 37.9            | 39.4 | "               | 11 ... | Do. numerous ...       | 38.0            | 39.0 |
| November        | 1 ...  | Do. do. ...           | 37.2            | 38.9 | "               | 12 ... | Do. do. ...            | 38.2            | 39.0 |
| "               | 2 ...  | Do. few ...           | 38.0            | 39.3 | "               | 13 ... | Do. few ...            | 37.8            | 38.6 |
| "               | 3 ...  | Do. numerous ...      | 39.2            | 39.8 | "               | 14 ... | Do. numerous ...       | 38.0            | 38.4 |
| "               | 4 ...  | Do. very numerous.    | 39.5            | 39.5 | "               | 15 ... | Do. very numerous      | 38.6            | 39.2 |
| "               | 5 ...  | Do. absent ...        | 38.6            | 39.8 | "               | 16 ... | Do. do. ...            | 38.4            | 39.2 |
| "               | 6 ...  | Do. do. ...           | 37.8            | 38.8 | "               | 17 ... | Do. do. ...            | 38.2            | 38.4 |
| "               | 7 ...  | Do. do. ...           | 38.4            | 38.6 | "               | 18 ... | Do. do. ...            | 38.0            | 38.4 |
| "               | 8 ...  | Do. few ...           | 38.5            | 39.0 | "               | 19 ... | Do. do. ...            | 38.2            | 39.0 |
| "               | 9 ...  | Do. very numerous.    | 39.8            | 39.6 | "               | 20 ... | Do. few ...            | 38.8            | 39.2 |
| "               | 10 ... | Do. few ...           | 38.8            | 38.8 | "               | 21 ... | Do. do. ...            | 38.6            | 39.6 |
| "               | 11 ... | Do. numerous ...      | 38.2            | 38.6 | "               | 22 ... | Do. do. ...            | 38.8            | 39.8 |
| "               | 12 ... | Do. very numerous.    | 38.6            | 39.2 | "               | 23 ... | Do. do. ...            | 38.8            | 40.0 |
| "               | 13 ... | Do. do. ...           | 38.4            | 39.6 | "               | 24 ... | Do. numerous ...       | 38.6            | 39.6 |
| "               | 14 ... | Do. numerous ...      | 38.2            | 39.2 | "               | 25 ... | Do. few ...            | 38.8            | 39.8 |
| "               | 15 ... | Do. do. ...           | 38.4            | 38.6 | "               | 26 ... | Do. numerous ...       | 38.6            | 39.6 |
| "               | 16 ... | Do. few ...           | 37.8            | 39.4 | "               | 27 ... | Do. do. ...            | 39.0            | 39.8 |
| "               | 17 ... | Do. very numerous.    | 38.8            | 39.2 | "               | 28 ... | Do. do. ...            | 38.8            | 39.4 |
| "               | 18 ... | Do. do. ...           | 39.0            | 40.0 | "               | 29 ... | Do. do. ...            | 38.6            | 39.6 |
| "               | 19 ... | Do. do. ...           | 38.4            | 39.0 | "               | 30 ... | Do. few ...            | 39.0            | 39.8 |
| "               | 20 ... | Do. do. ...           | 38.1            | 39.4 | "               | 31 ... | Do. do. ...            | 39.2            | 39.4 |
| "               | 21 ... | Do. do. ...           | 38.4            | 39.2 |                 |        |                        |                 |      |
| "               | 22 ... | Do. swarming ...      | 38.4            | 39.6 | 1894.           |        |                        |                 |      |
| "               | 23 ... | Do. do. ...           | 38.6            | 39.2 | January         | 1 ...  | Hæmatozoa few ...      | 39.4            | 39.4 |
| "               | 24 ... | Do. do. ...           | 38.3            | 39.6 | "               | 2 ...  | Do. do. ...            | 39.0            | 39.6 |
| "               | 25 ... | Do. do. ...           | 38.6            | 39.2 | "               | 3 ...  | Do. numerous ...       | 38.3            | 39.8 |
| "               | 26 ... | Do. do. ...           | 38.0            | 39.5 | "               | 4 ...  | Do. very numerous.     | 38.8            | 40.4 |
| "               | 27 ... | Do. do. ...           | 39.2            | 38.4 | "               | 5 ...  | Do. swarming ...       | 38.6            | 39.6 |
| "               | 28 ... | Do. do. ...           | 37.8            | 38.6 | "               | 6 ...  | Do. very numerous.     | 39.0            | 40.2 |
| "               | 29 ... | Do. very numerous.    | 38.0            | 38.9 | "               | 7 ...  | Do. do. ...            | 39.0            | 40.0 |
| "               | 30 ... | Do. few ...           | 38.2            | 39.0 | "               | 8 ...  | Do. swarming ...       | 39.2            | 39.4 |
| December        | 1 ...  | Do. do. ...           | 37.6            | 38.8 | "               | 9 ...  | Do. do. ...            | 38.5            | 39.6 |
| "               | 2 ...  | Do. do. ...           | 38.2            | 39.2 | "               | 10 ... | Do. do. ...            | 38.4            | 39.4 |
| "               | 3 ...  | Do. numerous ...      | 39.0            | 39.2 | "               | 11 ... | Do. do. ...            | 38.4            | 39.0 |
| "               | 4 ...  | Do. few ...           | 38.2            | 38.6 | "               | 12 ... | Do. ...                | 37.7            | 36.9 |
| "               | 5 ...  | Do. numerous ...      | 37.8            | 38.4 | Death at 7 P.M. |        |                        |                 |      |
| "               | 6 ...  | Do. very numerous.    | 37.6            | 38.3 |                 |        |                        |                 |      |
| "               | 7 ...  | Do. do. ...           | 38.0            | 37.0 |                 |        |                        |                 |      |



## CAT No. 1.

| Date.       | Day of Disease. | Temperature °C. |      | Hæmatozoa in Blood. | REMARKS.  |
|-------------|-----------------|-----------------|------|---------------------|---|
|             |                 | A.M.            | P.M. |                     |   |
| 1892.       |                 |                 |      |                     |   |
| August 18   | ...             | ...             | 39.0 | Healthy             | ...   |
| " 19        | ...             | 39.3            | 39.7 | "                   | ...   |
| " 20        | ...             | 39.7            | 39.3 | "                   | ...   |
| " 21        | ...             | 38.5            | 39.3 | "                   | ...   |
| " 22        | ...             | 38.6            | 39.2 | "                   | ...   |
| " 23        | ...             | 38.4            | 39.4 | "                   | ...   |
| " 24        | ...             | 39.0            | 39.3 | "                   | ...   |
| " 25        | ...             | 39.3            | 40.0 | "                   | ...   |
| " 26        | ...             | 40.4            | 40.5 | "                   | ...   |
| " 27        | ...             | 40.3            | 39.4 | "                   | ...   |
| " 28        | ...             | 38.6            | 38.8 | "                   | 28th.—Inoculated subcutaneously in the right inguinal region with 0.5 c.c. of blood, containing very numerous hæmatozoa taken from the jugular vein of Donkey No. II. |
| " 29        | ...             | 38.4            | 38.8 | Absent              | ...   |
| " 30        | ...             | 39.0            | 39.2 | "                   | 30th.—No swelling at the seat of inoculation.   |
| " 31        | ...             | 38.9            | 38.6 | "                   | 31st.—Several enlarged glands in the right inguinal region.   |
| September 1 | ...             | 39.2            | 39.2 | "                   | 1st.—The glands have increased in size, and are tender on manipulation.   |
| " 2         | 1               | 39.0            | 39.0 | Swarming            | ...   |
| " 3         | 2               | 39.6            | 40.1 | "                   | 3rd.—The animal appears healthy.  |
| " 4         | 3               | 39.3            | 40.4 | Numerous            | 4th.—Some œdema in right inguinal region, and a chain of enlarged glands running from mammary gland to symphysis pubis.   |
| " 5         | 4               | 38.8            | 39.0 | Absent              | ...   |
| " 6         | 5               | 38.4            | 39.1 | Few                 | ...   |
| " 7         | 6               | 39.1            | 39.2 | Numerous            | ...   |
| " 8         | 7               | 39.8            | 39.3 | Very numerous.      | 8th.—Swelling and œdema of right side of face.  |
| " 9         | 8               | 39.8            | 39.8 | "                   | 9th.—Do. do.  |
| " 10        | 9               | 40.0            | 39.3 | "                   | 10th.—Swelling of the right cheek and eyebrow has increased, and the blood-stained lacrymal secretion contained a few hæmatozoa.                                      |
| " 11        | 10              | 40.2            | 39.8 | Numerous            | 11th.—Swelling of left cheek, and œdema of conjunctiva of upper lid; appetite ravenous; inguinal glands somewhat reduced in size, and not tender.                     |
| " 12        | 11              | 40.8            | 40.6 | Few                 | 12th.—Swelling of left cheek reduced in size.   |
| " 13        | 12              | 40.2            | 40.6 | Absent              | 13th.—Swelling of the face disappeared. Enlarged glands still perceptible.  |
| " 14        | 13              | 40.4            | 40.8 | Few                 | 14th.—Swelling and œdema of the left lower eyelid.  |
| " 15        | 14              | 40.6            | 40.4 | "                   | 15th.—œdema of left lower eyelid disappeared.   |
| " 16        | 15              | 40.0            | 40.5 | Absent              | ...   |
| " 17        | 16              | 40.7            | 41.4 | Few                 | ...   |
| " 18        | 17              | 40.5            | 41.2 | "                   | 18th.—Slight swelling of right cheek, and œdema of conjunctiva.   |
| " 19        | 18              | 40.5            | 40.5 | "                   | ...   |
| " 20        | 19              | 40.3            | 40.3 | "                   | 20th.—œdema of both conjunctival membranes.   |
| " 21        | 20              | 40.8            | 41.0 | "                   | 21st.—Both cheeks swollen and œdematous, and a somewhat circular swelling the size of a marble at the root of each ear; soft but not tender.                          |
| " 22        | 21              | 41.0            | 41.0 | "                   | ...   |
| " 23        | 22              | 40.6            | 40.8 | "                   | 23rd.—Both eyes are occluded, owing to extreme œdema of the conjunctivæ. From root of tail for inches the seat of semi-solid œdema.                                   |
| " 24        | 23              | 40.8            | 40.5 | "                   | 24th.—œdema of tail extended towards tip. Considerable increase in number of white corpuscles in the blood.   |
| " 25        | 24              | 40.4            | 40.6 | Absent              | 25th.—Face remains circular in form from œdema. Conjunctivæ less œdematous.   |
| " 26        | 25              | 40.7            | 40.2 | "                   | ...   |
| " 27        | 26              | 41.0            | 40.4 | "                   | 27th.—White corpuscles still increased in number, and red corpuscles run together in masses.  |
| " 28        | 27              | 40.1            | 40.3 | Few                 | 28th.—Some catarrh of the nasal passages.   |
| " 29        | 28              | 40.7            | 40.6 | "                   | ...   |
| " 30        | 29              | 40.3            | 40.4 | "                   | ...   |
| October 1   | 30              | 40.4            | 40.2 | "                   | ...   |
| " 2         | 31              | 40.7            | 40.2 | "                   | 2nd.—Animal bright and active.  |
| " 3         | 32              | 41.2            | 41.1 | "                   | 3rd.—The swelling at the base of right ear, and œdema of right upper eyelid persist.  |



| Date.   |    | Date of Disease. | Temperature °C. |       | Hæmatozoa in Blood. |     | REMARKS.   |
|---------|----|------------------|-----------------|-------|---------------------|-----|--|
|         |    |                  | A. M.           | P. M. |                     |     |  |
| 1892.   |    |                  |                 |       |                     |     |  |
| October | 4  | ...              | 33              | 40·8  | 40·2                | Few | ...  |
| "       | 5  | ...              | 34              | 40·5  | 40·8                | "   | ...  |
|         |    |                  |                 |       |                     |     | 5th.—Acute nasal catarrh, with frequent sneezing; conjunctivæ of upper lids considerably swollen and œdematous, and lacrymal secretion mixed with blood, containing hæmatozoa. Inguinal glands continue enlarged, hard on manipulation. Appetite ravenous. |
| "       | 6  | ...              | 35              | 40·4  | 40·7                | "   | ...  |
| "       | 7  | ...              | 36              | 40·4  | 40·6                | "   | ...  |
| "       | 8  | ...              | 37              | 40·7  | 40·0                | "   | ...  |
| "       | 9  | ...              | 38              | 40·1  | 40·2                | "   | ...  |
| "       | 10 | ...              | 39              | 39·8  | 40·6                | "   | ...  |
| "       | 11 | ...              | 40              | 40·2  | 40·4                | "   | ...  |
| "       | 12 | ...              | 41              | 40·6  | 39·8                | "   | ...  |
|         |    |                  |                 |       |                     |     | 12th.—Swollen and œdematous condition of left eyelids, and base of left ear; also whole of the left hind limb is twice normal size, owing to the presence of œdema.  |
| "       | 13 | ...              | 42              | 40·3  | 38·8                | "   | ...  |
| "       | 14 | ...              | 43              | 40·1  | 39·8                | "   | ...  |
|         |    |                  |                 |       |                     |     | 14th.—Left hind limb reduced in size, but condition of eyelids unchanged.  |
| "       | 15 | ...              | 44              | 40·4  | 39·7                | "   | ...  |
|         |    |                  |                 |       |                     |     | 15th.—Left hind limb normal in size, but left fore limb has become elephantine in proportion owing to œdema.   |
| "       | 16 | ...              | 45              | 40·0  | 40·2                | "   | ...  |
|         |    |                  |                 |       |                     |     | 16th.—Left fore limb reduced in size, and animal active.   |
| "       | 17 | ...              | 46              | 40·2  | 40·2                | "   | ...  |
|         |    |                  |                 |       |                     |     | 17th.—Left fore limb almost normal in size, slight nasal catarrh still continues.  |
| "       | 18 | ...              | 47              | 40·2  | 40·0                | "   | ...  |
| "       | 19 | ...              | 48              | 40·6  | 40·0                | "   | ...  |
|         |    |                  |                 |       |                     |     | 18th.—Right hind limb much swollen, and œdematous.   |
|         |    |                  |                 |       |                     |     | 19th.—All limbs normal in size, appetite good, animal lively.  |
| "       | 20 | ...              | 49              | 38·7  | ...                 | "   | ...  |
|         |    |                  |                 |       |                     |     | 20th.—Animal dull, and semi-somnolent. Death took place at 10-30 A. M.   |

*Autopsy.*—Two hours *post mortem*.

Body-weight, 1,164 grammes; somewhat emaciated: limbs normal in size. *On section*, a layer of yellow jelly-like exudation presents itself, lying in the subcutaneous tissue of the skin covering the neck and chest. There are several dark-coloured lymphatic glands in each inguinal region, two of which present centres of caseation.

No fluid in the *pleural cavities*, or adhesions of the visceral and parietal pleuræ.

*Lungs* present a localized emphysema at the apices, pale pink, but no extravasations on their surface. *On section*, tissues healthy.

The *pericardium* contains a small quantity of a light amber-coloured fluid.

*Heart*—*Externally* presents a pale appearance, but no sub-pericardial ecchymoses. The right side of the organ is empty and flaccid, the left side contracted. *On section*, *Right Auricle* and *Ventricle* are empty, and present no pathological changes. The *Left Auricle* and *Ventricle* are also empty, and present no pathological changes.

*Abdominal Cavity.*—There is no fluid in the cavity of the peritoneum. There are, however, several enlarged glands lying on either side of the lumbar vertebræ; two are brick-red in colour, and measure  $\frac{3}{4}$ " by  $\frac{3}{8}$ ".

*Stomach.*—Contracted; *on section*, healthy.

*Liver.*—Large; weight 107 grammes; dark brown in colour; capsule smooth. *On section*, blood flows from the cut surfaces of the vessels, and the tissues present a perfectly healthy appearance.

*Spleen.*—Enlarged; weight, 9 grammes; otherwise healthy.

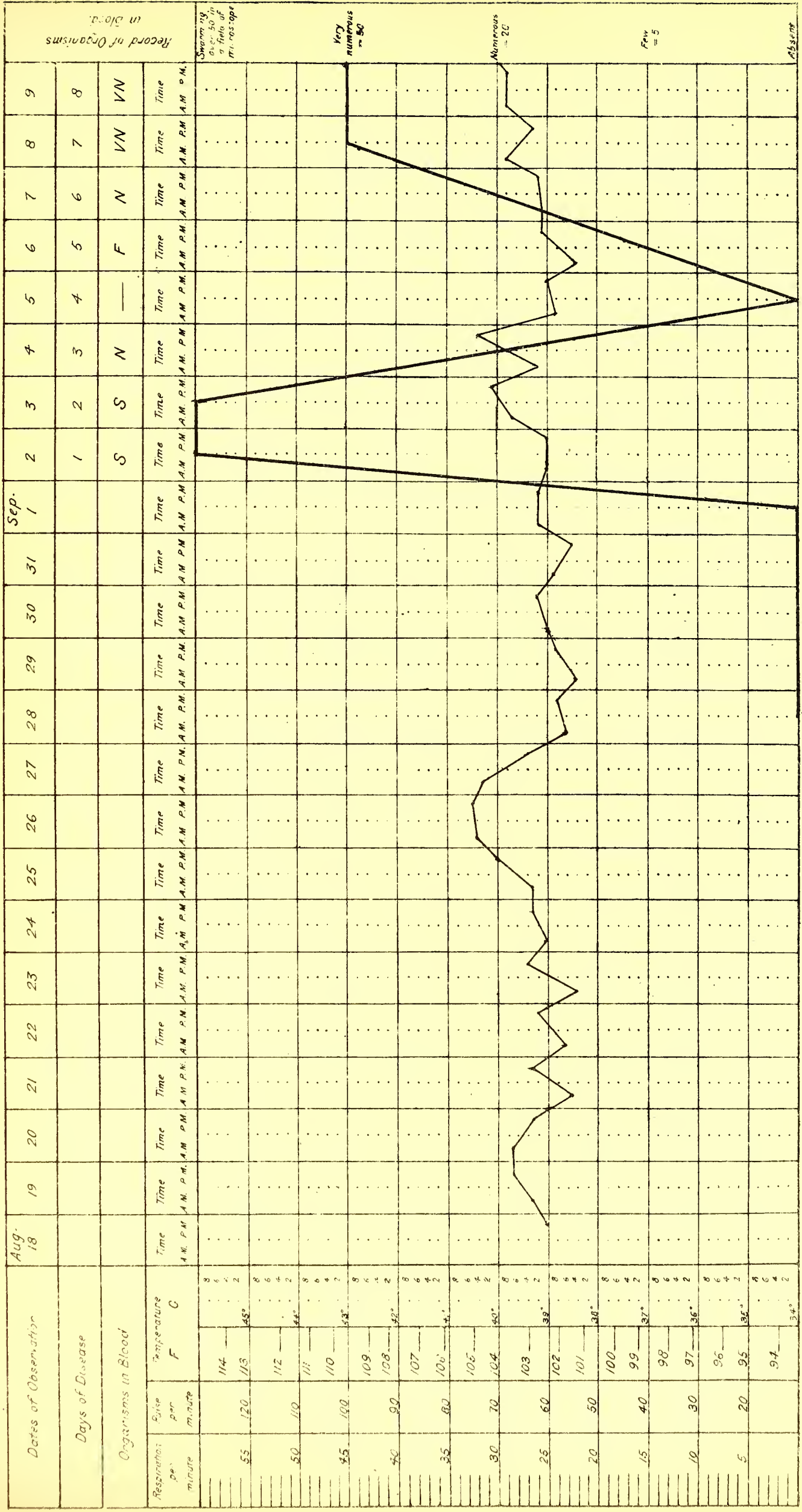
*Kidneys.*—*Right*, 9·5 grammes, *Left*, 9 grammes, capsules strip easily. Superficial capillary vessels injected. *On section*, tissues appear healthy.

*Intestines.*—Healthy.

*Bladder.*—The urine removed was found to contain albumen  $\frac{1}{4}$ th.

*Remarks.*—This animal was inoculated subcutaneously on the 28th August 1892, with 0·5 c.c. of blood containing very numerous hæmatozoa, taken from the jugular vein of Donkey No. II. The hæmatozoon, in this case, was originally taken from the circulation of the Rat (*mus decumanus*) and passed through two Horses Nos. LXII and LXVII, previous to the inoculation of the Donkey. No swelling of the neighbouring tissues followed inoculation, but the glands in the inguinal region of the same side became enlarged, and a few days later a chain of small glands became noticeable between the right mammary gland and symphysis pubis. On the fifth morning after inoculation, the hæmatozoon was discovered swarming in the blood, although up to that time it had been absent. On the sixth day following the first appearance of the organism in the blood, swelling and œdema of the right side of the face appeared; this increased during the 7th and 8th days, accompanied by lachrymation on the same side; the secretion contained a few hæmatozoa. On the day that the swelling and œdema decreased on the right side of the face, it commenced to

Cat \_\_\_\_\_ Age 3 Months \_\_\_\_\_ Sex Female \_\_\_\_\_ Colour \_\_\_\_\_  
Disease, Surra from Donkey \_\_\_\_\_ Date of Inoculation, 28 August 1892 \_\_\_\_\_ Result, Death \_\_\_\_\_ Date of Result, 21.10.92 \_\_\_\_\_ Register No. I.



15 4.51

Hematocrit curve

Temperature





Cat \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_ Colour \_\_\_\_\_  
Disease \_\_\_\_\_ Date of \_\_\_\_\_ Result \_\_\_\_\_ Register No. I \_\_\_\_\_

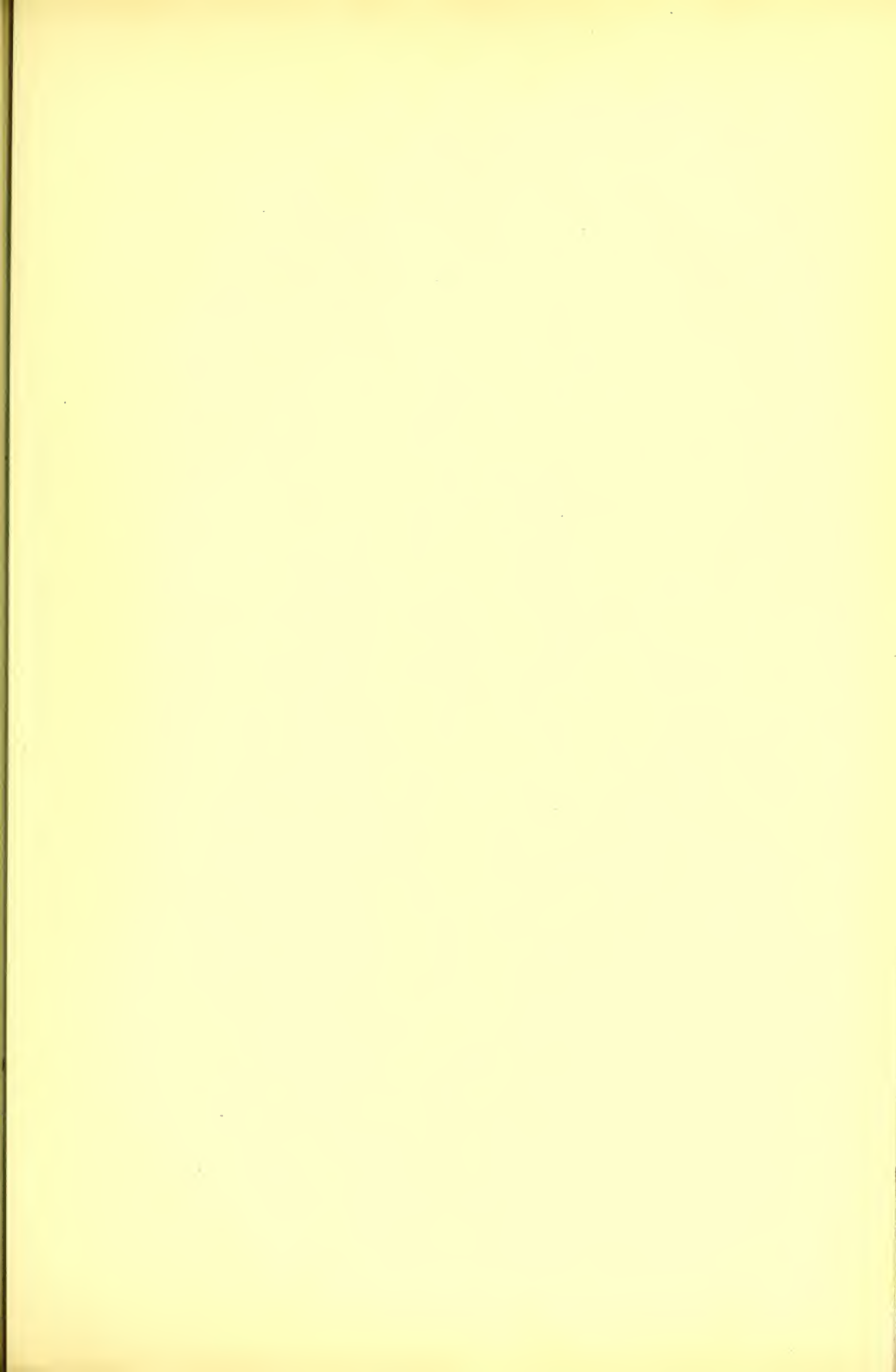
| Dates of Observation. |           |      | Temperature |      | Pulse      | Respiration | Record of Organisms in Blood |      | Swarming over 50 in a field of microscope |      | Very numerous = 50 |      | Numerous = 20 |      | Few = 5 |      | Absent |      |      |        |      |      |
|-----------------------|-----------|------|-------------|------|------------|-------------|------------------------------|------|---|------|--------------------|------|---------------|------|---------|------|--------|------|------|--------|------|------|
| Days of Disease       |           |      | F           | C    | per minute | per minute  | in Blood                     |      |   |      |                    |      |               |      |         |      |        |      |      |        |      |      |
| Sep. 10               | 11        | 12   | 13          | 14   | 15         | 16          | 17                           | 18   | 19  | 20   | 21                 | 22   | 23            | 24   | 25      | 26   | 27     | 28   | 29   | Oct. 1 | 2    |      |
|                       | 10        | 11   | 12          | 13   | 14         | 15          | 16                           | 17   | 18  | 19   | 20                 | 21   | 22            | 23   | 24      | 25   | 26     | 27   | 28   | 29     | 30   | 31   |
|                       | N         | F    | —           | F    | F          | —           | F                            | F    | F   | F    | F                  | F    | F             | F    | —       | —    | F      | F    | F    | F      | F    |      |
|                       | VN        | F    | —           | F    | F          | —           | F                            | F    | F   | F    | F                  | F    | F             | F    | —       | —    | F      | F    | F    | F      | F    |      |
|                       | 4 M. P.M. | A.M. | P.M.        | A.M. | P.M.       | A.M.        | P.M.                         | A.M. | P.M.                                      | A.M. | P.M.               | A.M. | P.M.          | A.M. | P.M.    | A.M. | P.M.   | A.M. | P.M. | A.M.   | P.M. | A.M. |
|                       | 8         | 6    | 4           | 2    | 8          | 6           | 4                            | 2    | 8   | 6    | 4                  | 2    | 8             | 6    | 4       | 2    | 8      | 6    | 4    | 2      | 8    | 6    |
|                       | 55        | 120  | 45°         | 114  | 113        | 112         | 111                          | 110  | 109                                       | 108  | 107                | 106  | 105           | 104  | 103     | 102  | 101    | 100  | 99   | 98     | 97   | 96   |
|                       | 50        | 110  | 44°         | 112  | 111        | 110         | 109                          | 108  | 107                                       | 106  | 105                | 104  | 103           | 102  | 101     | 100  | 99     | 98   | 97   | 96     | 95   | 94   |
|                       | 45        | 100  | 43°         | 111  | 110        | 109         | 108                          | 107  | 106                                       | 105  | 104                | 103  | 102           | 101  | 100     | 99   | 98     | 97   | 96   | 95     | 94   | 93   |
|                       | 40        | 90   | 42°         | 110  | 109        | 108         | 107                          | 106  | 105                                       | 104  | 103                | 102  | 101           | 100  | 99      | 98   | 97     | 96   | 95   | 94     | 93   | 92   |
|                       | 35        | 80   | 41°         | 109  | 108        | 107         | 106                          | 105  | 104                                       | 103  | 102                | 101  | 100           | 99   | 98      | 97   | 96     | 95   | 94   | 93     | 92   | 91   |
|                       | 30        | 70   | 40°         | 108  | 107        | 106         | 105                          | 104  | 103                                       | 102  | 101                | 100  | 99            | 98   | 97      | 96   | 95     | 94   | 93   | 92     | 91   | 90   |
|                       | 25        | 60   | 39°         | 107  | 106        | 105         | 104                          | 103  | 102                                       | 101  | 100                | 99   | 98            | 97   | 96      | 95   | 94     | 93   | 92   | 91     | 90   | 89   |
|                       | 20        | 50   | 38°         | 106  | 105        | 104         | 103                          | 102  | 101                                       | 100  | 99                 | 98   | 97            | 96   | 95      | 94   | 93     | 92   | 91   | 90     | 89   | 88   |
|                       | 15        | 40   | 37°         | 105  | 104        | 103         | 102                          | 101  | 100                                       | 99   | 98                 | 97   | 96            | 95   | 94      | 93   | 92     | 91   | 90   | 89     | 88   | 87   |
|                       | 10        | 30   | 36°         | 104  | 103        | 102         | 101                          | 100  | 99  | 98   | 97                 | 96   | 95            | 94   | 93      | 92   | 91     | 90   | 89   | 88     | 87   | 86   |
|                       | 5         | 20   | 35°         | 103  | 102        | 101         | 100                          | 99   | 98  | 97   | 96                 | 95   | 94            | 93   | 92      | 91   | 90     | 89   | 88   | 87     | 86   | 85   |
|                       |           |      | 34°         | 102  | 101        | 100         | 99                           | 98   | 97  | 96   | 95                 | 94   | 93            | 92   | 91      | 90   | 89     | 88   | 87   | 86     | 85   | 84   |





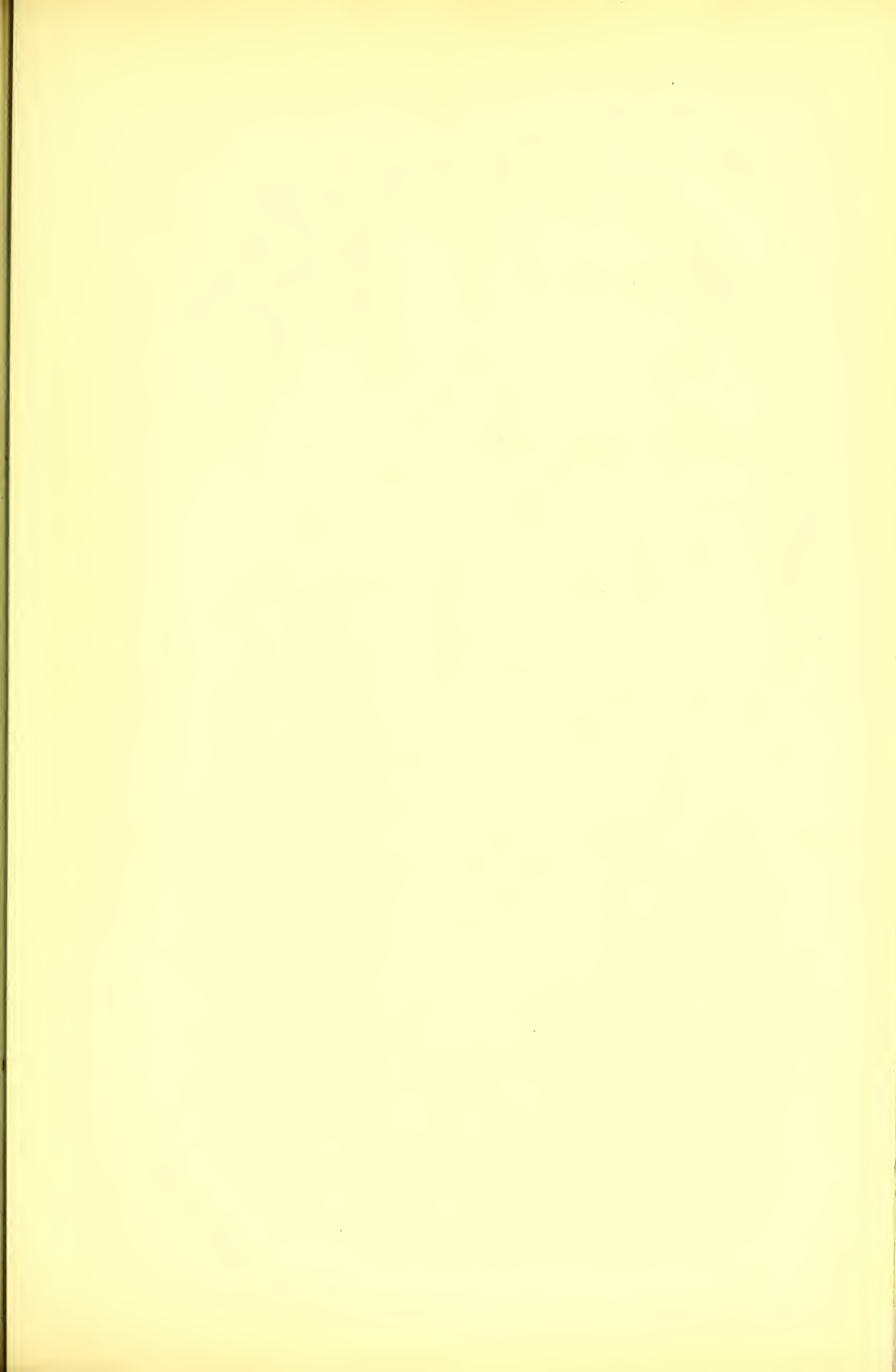














appear on the left, accompanied by swelling and œdema of the palpebral conjunctivæ, but no petechiæ were observed. On the 11th day the swelling had disappeared from the face, but the next day swelling of the left palpebral conjunctiva was present, and lasted one day. On the 16th day, swelling of the right side of the face became apparent; and two days later, both sides were affected, and lumps of exudation were observed at the root of the ears. On the 21st day, both eyes were occluded in consequence of considerable œdema of the conjunctivæ of both the upper and lower lids. The root of the tail for two inches was also the seat of considerable swelling and exudation. The symptoms of occlusion of the eyes passed off by the morning of the 23rd day, but the face remained swollen; and at a later date, the animal developed an acute nasal catarrh, accompanied by sneezing, together with an elephantine condition of the left hind limb, which became swollen and the seat of an extensive œdema, the limb being at the very least, twice the size of the right. When this limb decreased in size the front one on the same side assumed enormous proportions; but this condition only lasted for twenty-four hours, and then the right hind limb became similarly affected. The appetite has never failed since the date of inoculation; and at times it has been ravenous, although the animal was given a liberal supply.

From the 12th of September to October 21st the hæmatozoa have, with four exceptions, been constantly present in the blood.

DOG I.—A YOUNG PARIAH.

| Date.     |    |     |     | Day of Disease. |      | Temperature °C. |      | Hæmatozoa in Blood.   | REMARKS. |
|-----------|----|-----|-----|-----------------|------|-----------------|------|---|----------|
|           |    |     |     |                 |      | A.M.            | P.M. |   |          |
| 1892.     |    |     |     |                 |      |                 |      |   |          |
| August    | 28 | ... | ... | 38·6            | 39·3 | Healthy         | ...  | Subcutaneously inoculated in the right inguinal region with 0·6 c.c. of blood, containing very numerous hæmatozoa, taken from the jugular vein of Donkey No. II.  |          |
| "         | 29 | ... | ... | 39·2            | 39·3 | Absent          | ...  | Small swelling at the seat of inoculation.  |          |
| "         | 30 | ... | ... | 39·0            | 38·8 | "               | ...  | There is some tenderness in the swelling at the seat of inoculation.  |          |
| "         | 31 | ... | ... | 38·8            | 39·1 | "               | ...  | Swelling increased in size.   |          |
| September | 1  | ... | ... | 39·2            | 39·8 | "               | ...  | Swelling further increased in size.   |          |
| "         | 2  | ... | 1   | 38·9            | 39·1 | Very numerous.  | ...  | Do. do.   |          |
| "         | 3  | ... | 2   | 39·6            | 38·7 | Few             | ...  | Swelling larger, and œdema spreads from right groin to the left side of symphysis pubis.  |          |
| "         | 4  | ... | 3   | 38·7            | 38·2 | "               | ...  |   |          |
| "         | 5  | ... | 4   | 39·0            | 40·0 | "               | ...  |   |          |
| "         | 6  | ... | 5   | 39·0            | 39·6 | Numerous        | ...  |   |          |
| "         | 7  | ... | 6   | 39·0            | 38·8 | Few             | ...  |   |          |
| "         | 8  | ... | 7   | 38·7            | 39·0 | Numerous        | ...  |   |          |
| "         | 9  | ... | 8   | 39·5            | 39·4 | Few             | ...  |   |          |
| "         | 10 | ... | 9   | 39·6            | 39·8 | "               | ...  |   |          |
| "         | 11 | ... | 10  | 39·3            | 39·3 | "               | ...  |   |          |
| "         | 12 | ... | 11  | 39·3            | 39·6 | Absent          | ...  |   |          |
| "         | 13 | ... | 12  | 39·5            | 40·0 | Few             | ...  | 13th.—Animal's left cheek and lower eyelid swollen; the swelling is circumscribed, and on manipulation apparently contains a semi-fluid jelly.  |          |
| "         | 14 | ... | 13  | 39·8            | 40·0 | Numerous        | ...  | Do. do.   |          |
| "         | 15 | ... | 14  | 40·1            | 40·2 | Few             | ...  | Do. do.   |          |
| "         | 16 | ... | 15  | 39·2            | 39·3 | Very numerous.  | ...  | 16th.—Swelling of face entirely disappeared, and the animal appears in perfect health. Appetite voracious.  |          |
| "         | 17 | ... | 16  | 40·1            | 40·4 | Absent          | ...  |   |          |
| "         | 18 | ... | 17  | 40·2            | 40·5 | "               | ...  |   |          |
| "         | 19 | ... | 18  | 40·2            | 40·0 | Few             | ...  |   |          |
| "         | 20 | ... | 19  | 40·0            | 39·2 | "               | ...  |   |          |
| "         | 21 | ... | 20  | 40·2            | 40·0 | "               | ...  |   |          |
| "         | 22 | ... | 21  | 40·0            | 40·0 | Very numerous.  | ...  |   |          |
| "         | 23 | ... | 22  | 40·4            | 40·2 | Swarming        | ...  |   |          |
| "         | 24 | ... | 23  | 40·2            | 39·3 | "               | ...  | 24th.—White corpuscles of the blood considerably increased in number since yesterday.   |          |
| "         | 25 | ... | 24  | 40·3            | 38·9 | "               | ...  | 25th.—Slight lacrymation; otherwise the animal appears healthy.   |          |
| "         | 26 | ... | 25  | 40·1            | ...  | Teeming         | ...  | 26th.—Animal weaker and unable to rise, breathing quickened (61 respirations per minute). The right cornea is quite milky in appearance.  |          |
| "         | 27 | ... | 26  | ...             | ...  | .....           | ...  | Urine passed involuntarily, turbid, Sp. gr. 1,008. Slightly acid. Albumen $\frac{1}{10}$ th. Contains no hæmatozoa, although numerous specimens were examined microscopically. 6 P.M. animal convulsed, fore limbs extended and rigid; and unconsciousness supervened. Death took place at 9 P.M. |          |





## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Australian Mare

Australian Mare -  
Disease, Surra from Cow

*Date of Inoculation, 3. 9. 92.*

Result, Death

Age, Aged \_\_\_\_\_ Se  
Date of Result, 22.9.92

Ware \_\_\_\_\_ Color \_\_\_\_\_  
Register No. *LXIX*

Colour, Bay.

Disease, Surra from Cow

*Date of Inoculation, 3. 9. 92.*

## Result, Death

Date of Result, 22.9.92

Register No. **LXX**

XX

[illegible]

(S 415)

Hypermethylation curve

Drawn by Lieut. Govt. Piquemine: Grace Piquine 1893

Pulse.....

\* Subcutaneously inoculated with 0.5 cc of blood containing swarms of *Haematozoo* taken from Cow I.







| Date.         | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood.  | Urine.  |         |            |                |
|---------------|-----------------|--------|--------|--------|------|--------------|------|--|---------|---------|------------|----------------|
|               | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |  | Colour. | Sp. Gr. | Re-action. | Albumen.       |
| 1892.         |                 |        |        |        |      |              |      |  |         |         |            |                |
| September 12. | 39.1            | 39.8   | 40.3   | 63     | 66   | 28           | 26   | Swarming.  | Turbid. | 1,029   | Alkaline.  | Nil.           |
|               |                 |        |        |        |      |              |      | Swelling of limbs increased, especially of near fore.  |         |         |            |                |
| " 13.         | 40.0            | 40.0   | 39.3   | 60     | 60   | 24           | 24   | Swarming.  | "       | 1,028   | "          | Trace          |
|               |                 |        |        |        |      |              |      | Animal semi-somnolent, secretion at the inner canthus of both eyes is blood-stained, and contains hæmatozoa. |         |         |            |                |
| " 14.         | 39.3            | 40.4   | 40.0   | 60     | 60   | 16           | 24   | Numerous.  | "       | 1,032   | "          | "              |
|               |                 |        |        |        |      |              |      | Animal brighter, swelling and œdema of extremities decreased, but conjunctivæ still yellow and petechiated.  |         |         |            |                |
| " 15.         | 37.6            | 39.3   | 39.3   | 60     | 72   | 16           | 16   | Absent.  | "       | 1,034   | "          | "              |
|               |                 |        |        |        |      |              |      | Conjunctival petechiæ fading.  |         |         |            |                |
| " 16.         | 39.3            | 40.2   | 40.3   | 63     | 52   | 28           | 32   | "  | "       | 1,034   | "          | $\frac{1}{20}$ |
|               |                 |        |        |        |      |              |      | Conjunctival petechiæ fading.  |         |         |            |                |
| " 17.         | 37.4            | 40.2   | 39.3   | 40     | 48   | 20           | 24   | Few.   | "       | 1,041   | "          | Trace.         |
|               |                 |        |        |        |      |              |      | Animal weaker, considerable œdema of the extremities.  |         |         |            |                |
| " 18.         | 37.6            | 38.6   | 38.1   | 44     | 60   | 20           | 32   | Numerous.  | "       | 1,035   | "          | "              |
| " 19.         | 39.8            | 40.2   | 40.2   | 72     | 72   | 28           | 28   | Very numerous.   | "       | 1,022   | "          | "              |
|               |                 |        |        |        |      |              |      | Animal continues to get weaker.  |         |         |            |                |
| " 20.         | 39.3            | 40.0   | 39.3   | 60     | 68   | 28           | 36   | Swarming.  | Clear.  | 1,020   | Acid.      | "              |
| " 21.         | 38.0            | 39.3   | 39.3   | 68     | 72   | 32           | 28   | "  | "       | 1,026   | "          | "              |
|               |                 |        |        |        |      |              |      | 9 P.M. The animal ate all its corn and hay.  |         |         |            |                |
| " 22.         | ...             | ...    | ...    | ...    | ...  | ...          | ...  | .....  | "       | ...     | "          | ...            |
|               |                 |        |        |        |      |              |      | Died somewhat suddenly at 3 A.M.   |         |         |            |                |

*Autopsy.*—The body is very slightly emaciated; the extremities are swollen and œdematous. There are no adhesions, or fluid in the cavity of the pleuræ.

*Lungs.*—The apices are the seat of localized emphysema; the surfaces of the organ are pale. *On section*, the tissues appear healthy.

The cavity of the *pericardium* contains nearly a pint of dark blood-stained fluid.

*Heart.*—There is a certain amount of yellow jelly-like exudation round the base of the organ, and dotted over the general surface of the muscular tissue are some few extravasations, lying under the visceral pericardium. *On section*, the *Right Auricle* and *Ventricle* contain dark blood clots, and the endocardial surfaces are deeply blood-stained, but there are no sub-endocardial extravasations. The *Left Auricle* presents a normal appearance. The *Left Ventricle* is contracted, and the internal surface for the most part pale in colour, but there are some small sub-endocardial extravasations dotted about the cavity, in addition to several larger patches which involve the muscoli-papillares.

*Liver.*—Weighs 11 lbs. 13½ ozs., is dark in colour, and presents a few circular calcareous bodies dotted over the surface, lying beneath the capsule.

*Spleen.*—Considerably enlarged, weighs 5 lbs. 11 ozs. It is dotted over with somewhat circular shaped patches of a dark brick-red colour. *On section*, these are found to lie beneath the capsule. The tissues are soft.

*Kidneys.*—*Right* weighs 1 lb. 7½ ozs., *Left* 1 lb. 8 ozs. The capsules are somewhat difficult to strip in parts; the general surface of the organs is pale, dotted over here and there with small circular petechiæ, and some patches of injected stellate veins. *On section*, the tissues present a pale appearance and are friable, readily splitting apart with an irregular, fibrous fracture.

*Stomach.*—Distended with semi-digested food. *On section*, the *cuticular* portion is stained a deep yellow colour near the boundary line, otherwise quite normal in appearance. The *villous* portion is pale, the mucous membrane a little thickened; no parasites.

The *Small Intestines* present a few petechiæ, dotted over the mucous membranes of a limited area 38" × 4" in extent, midway between the pylorus and the cæcum; no ulceration, no parasites.

The *Large Intestines* including the *Cæcum* and *Colon* appear quite healthy. The *Rectum* presents a patch, which is partially denuded of the superficial portion of the mucous membrane. It has a worm-eaten appearance, but is not congested at the edges or thickened; no parasites.

*Remarks.*—Our previous investigations demonstrated that the Bovine species are only slightly susceptible to Surra, and that the disease never proves fatal to them. This experiment was undertaken with a view of ascertaining whether the virus, when taken from the Bovine species and inoculated into Equines, would produce a milder form of the disease.

The animal was therefore inoculated subcutaneously on the 3rd September 1892, with 0.5 c.c. of blood in which the hæmatozoa were swarming, taken from the internal jugular vein of the cow. This was followed by swelling and œdema at the seat of inoculation, accompanied by tenderness on manipulation. On the 8th September, 5 days after the inoculation, there was a slight but well marked decrease in the tension of the tumour, and a few hæmatozoa were found in the blood. The usual symptoms of Surra followed, and the animal succumbed to the disease, fourteen days

after the first appearance of the hæmatozoon in the blood, and nineteen after inoculation. At the Autopsy, extensive pathological lesions were found involving the heart, kidney, liver and spleen, and the two latter were also found to be very considerably enlarged.

#### EXPERIMENT No. II.—RABBIT II.

21st, July 1892.—5-20 P.M. Inoculated the animal subcutaneously in the right inguinal region with 0.75 c.c. of blood containing hæmatozoa taken from the heart of Horse No. LXII, immediately after death. This horse had been inoculated with rat's (*Mus Decumanus*) blood. Temp. P.M. 39.4 °C.

22nd.—Temp. A.M. 40.0 °C. Hæmatozoa absent. Temp. P.M. 40.3 °C.

23rd.—There is no swelling or oedema at the seat of inoculation. Temp. A.M. 39.4 °C. Hæmatozoa absent. Temp. P.M. 40.3 °C.

24th.—Temp. A.M. 40.0 °C. Hæmatozoa absent. Temp. P.M. 40.2 °C.

25th.—Temp. A.M. 39.8 °C. The white corpuscles are increased in number, but there are no hæmatozoa in the blood. Temp. P.M. 40.5 °C.

26th.—Temp. A.M. 41.2 °C. There are a few hæmatozoa in the blood. Temp. P.M. 41.6 °C.

27th.—Temp. A.M. 40.4 °C. Hæmatozoa absent. Temp. P.M. 40.8 °C.

28th.—Temp. A.M. 40.1 °C. Hæmatozoa absent. Temp. P.M. 40.4 °C.

29th.—Temp. A.M. 40.4 °C. P.M. 40.7 °C. Hæmatozoa absent.

30th.—Temp. A.M. 40.3 °C. P.M. 40.2 °C. „

31st.—Temp. A.M. 40.2 °C. P.M. 40.4 °C. „

1st August.—Temp. A.M. 40.2 °C. P.M. 40.7 °C. Hæmatozoa Few.

2nd.—Temp. A.M. 40.8 °C. P.M. 41.0 °C. Hæmatozoa Few „

3rd.—Temp. A.M. 40.8 °C. P.M. 40.7 °C. Hæmatozoa absent.

4th.—Temp. A.M. 40.8 °C. P.M. 41.3 °C. „

5th.—Temp. A.M. 40.8 °C. P.M. 41.0 °C. „

The red blood corpuscles do not form rouleaux, and the white ones, which on the 25th ultimo appeared to be increased in numbers, have now returned to the healthy standard.

6th.—Temp. A.M. 40.7 °C. P.M. 41.8 °C. Hæmatozoa absent.

7th.—Temp. A.M. 41.1 °C. P.M. 41.6 °C. „

The red corpuscles do not form rouleaux, and are for the most part lozenge-shaped. The white contain one or more nuclei and numerous highly refractile granules.

8th.—Temp. A.M. 40.2 °C. P.M. 40.5 °C. No hæmatozoa in the blood.

9th.—Temp. A.M. 40.4 °C. P.M. 40.5 °C. Few „ „

10th.—Temp. A.M. 40.6 °C. P.M. 41.6 °C. „ „ „

11th.—Temp. A.M. 41.1 °C. P.M. 41.4 °C. „ „ „

12th.—Death occurred in the early morning.

#### RESULTS NEGATIVE.

#### BULL No. I.

This animal was brought to the Laboratory on the 5th March 1891 and was kept under observation until the 24th of the same month, during which time it appeared quite healthy and normal in every respect. On the latter date, it was inoculated subcutaneously in the right thigh with 1.75 c.c. of blood, containing numerous hæmatozoa, drawn from the jugular vein of Horse No. XIX, previously inoculated with the same disease. The incubative period occupied 5 days. Two short paroxysms occurred during the first few days of the disease, but although the blood was further examined daily until June 17th, eighty-five days after inoculation, no hæmatozoa were found. On this latter date, two guinea pigs were inoculated with 0.2 c.c. of blood derived from the bull, and in each instance the hæmatozoon followed after a period of ten days. During the interval of 78 days which elapsed between June 17th and September 3rd, 1891, no organisms were discovered in the blood of the bull, although several cover glass specimens of it were examined daily. On the 163rd day after the primary inoculation, two more guinea pigs were injected with 0.2 c.c. of bull's blood, and ten days latter the organism of Surra was found in the general circulation of both animals. Negative results followed the inoculation of guinea pigs with small quantities of the bull's blood on the 234th and 267th days. As seventeen months had elapsed from the date of the primary inoculation of the animal on March 24th, 1891, and no organisms had been discovered in its blood on microscopical examination since the 2nd April 1891, it was resolved on the 22nd August 1892 to re-inoculate the animal with a more virulent type of Surra, obtained by passing the hæmatozoon of the rat (*Mus Decumanus*) through the horse and donkey. One cubic centimetre of blood containing very numerous and active hæmatozoa, drawn from the internal jugular vein of Donkey No. I, was subcutaneously injected over the left scapular region. On the 28th of August 1892, a peculiar hæmatozoon was found in the blood, but for that day only. The animal put on flesh and appeared in robust health. Two guinea-pigs inoculated, 21st September, with blood drawn from the jugular vein, failed to reproduce the disease. The observations were continued from the last appearance of the organism, viz., 28th August 1891 until the 30th June 1892, a period of 306 days. The above observations included the daily records of temperature, pulse, respiration, together with the examination of blood and urine. (See remarks Vol. I, page cccxiii.)



RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Rabbit inoculated with 0.75 cc. of blood from the heart of Horse No LXII      Age, 2      Sex, Buck      Colour, White  
Disease. Rat Surra      Date of Inoculation, 22 July 1892      Result, Death      Date of Result, Aug. 12. 92      Register No. II

| Dates of Observation.  |                  | July 22     |     | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | Aug. 1 | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   |
|------------------------|------------------|-------------|-----|------|------|------|------|------|------|------|------|------|--------|------|------|------|------|------|------|------|------|------|------|------|------|
| Days of Disease        |                  |             |     |      |      |      | 1    | 2    | 3    | 4    | 5    | 6    | 7      | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   |      |
| Organisms in Blood     |                  |             |     |      |      |      | F    |      |      |      |      |      | F      | F    |      |      |      |      |      |      | F    | F    |      |      |      |
| Respiration per minute | Pulse per minute | Temperature |     | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time   | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |
|                        |                  | F           | C   | AM   | PM   | AM   | PM   | AM   | PM   | AM   | PM   | AM   | PM     | AM   | PM   | AM   | PM   | AM   | PM   | AM   | PM   | AM   | PM   | AM   | PM   |
|                        |                  | 114         | 45° |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
| 55                     | 120              |             |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 112         | 44° |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
| 50                     | 110              |             |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 111         |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 110         |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
| 45                     | 100              |             |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 109         | 43° |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 108         |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
| 40                     | 90               |             |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 107         | 42° |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 106         |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
| 35                     | 80               |             |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 105         | 41° |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 104         |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
| 30                     | 70               |             |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 103         | 40° |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 102         |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
| 25                     | 60               |             | 39° |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 101         |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 100         | 38° |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 99          |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
| 15                     | 40               |             | 37° |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 98          |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 97          | 36° |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 96          |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 95          | 35° |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
| 5                      | 20               |             |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  | 94          | 34° |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |
|                        |                  |             |     |      |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |

Swarming over 50 in a field of microscope

Very numerous = 50

Numerous = 20

Few = 5

Absent

Death a.m.

Swarming over 50 in a field of microscope      Very numerous = 50      Numerous = 20      Few = 5      Absent

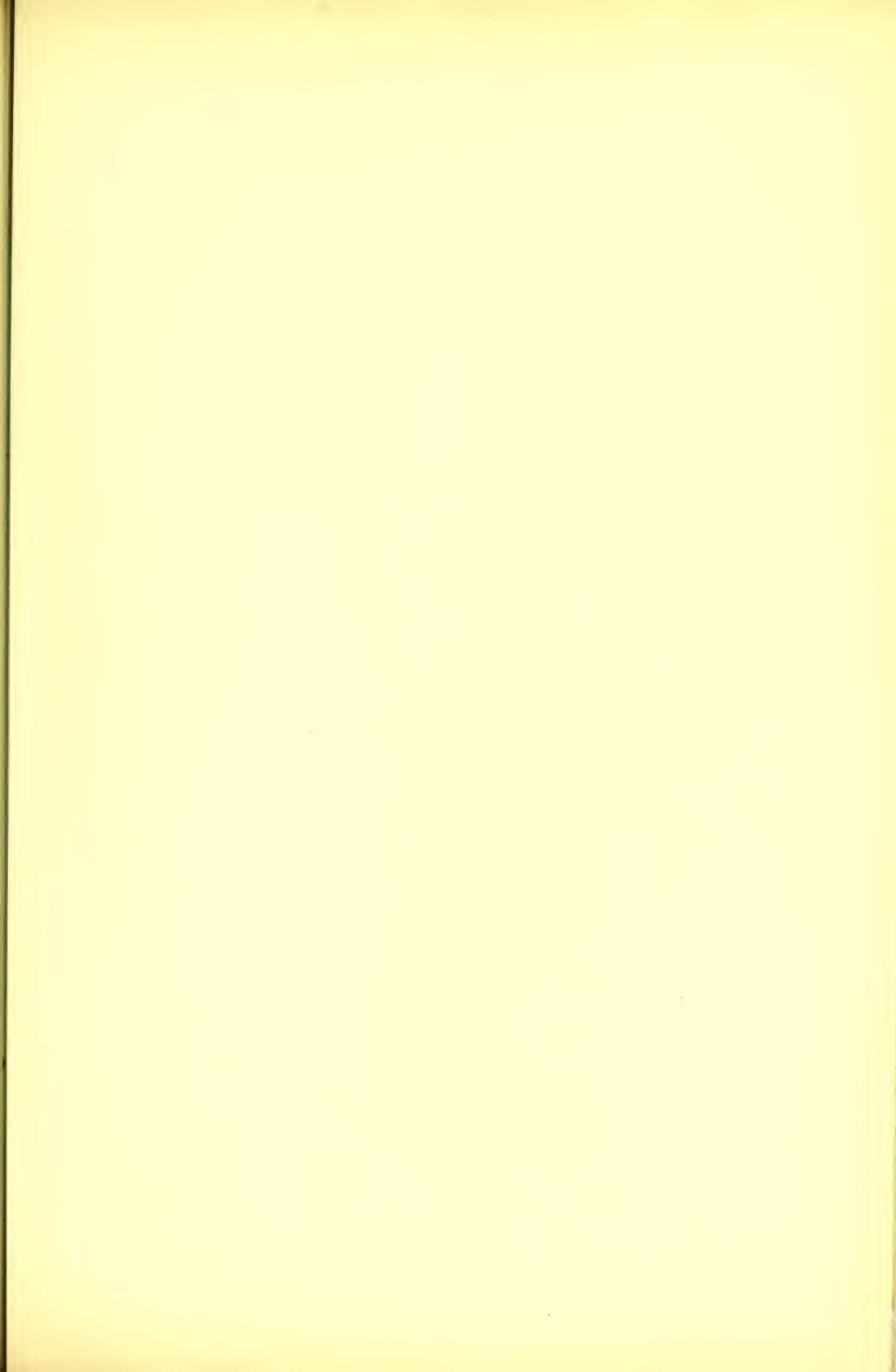
Death a.m.

Haematocrit curve      Temperature.....

Drawn & Litho East Photodupco Office Praha 1893



















Age,

See,

Colour, Brown

Disease, —

Date of

### Result,

Date of Result,

Register No.

| Dates of Observation.   | Feb.<br>12       | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | March<br>1 | 2    | 3    | 4    | 5    | 6    |
|-------------------------|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------------|------|------|------|------|------|
| Days of Disease         |                  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |
| Organisms in Blood.     |                  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |            |      |      |      |      |      |
| Respiration per minute. | Pulse per minute | F    | C    | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M.       | P.M. | A.M. | P.M. | A.M. | P.M. |
| Temperature C           | Time             | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time       | Time | Time | Time | Time | Time |
| 55                      | 120              | 114  | 45°  | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .          | .    | .    | .    | .    | .    |
| 50                      | 110              | 112  | 44°  | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .          | .    | .    | .    | .    | .    |
| 45                      | 100              | 110  | 43°  | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .          | .    | .    | .    | .    | .    |
| 40                      | 90               | 108  | 42°  | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .          | .    | .    | .    | .    | .    |
| 35                      | 80               | 106  | 41°  | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .          | .    | .    | .    | .    | .    |
| 30                      | 70               | 104  | 40°  | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .          | .    | .    | .    | .    | .    |
| 25                      | 60               | 103  | 39°  | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .          | .    | .    | .    | .    | .    |
| 20                      | 50               | 101  | 38°  | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .          | .    | .    | .    | .    | .    |
| 15                      | 40               | 99   | 37°  | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .          | .    | .    | .    | .    | .    |
| 10                      | 30               | 97   | 36°  | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .          | .    | .    | .    | .    | .    |
| 5                       | 20               | 95   | 35°  | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .          | .    | .    | .    | .    | .    |
|                         |                  | 94   |      | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .          | .    | .    | .    | .    | .    |
|                         |                  | 34°  | 2    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .          | .    | .    | .    | .    | .    |

Sweating over 60 in a field of microbes

Very numerous = 50

Numerous = 20

Few = 5

Absent

Record of Organisms in Blood.

(5.415)

Haematozoan Curve  
Temperature . . . . .

Drawn & Litho: Govt. Photodupl. Office, Poona 1893.

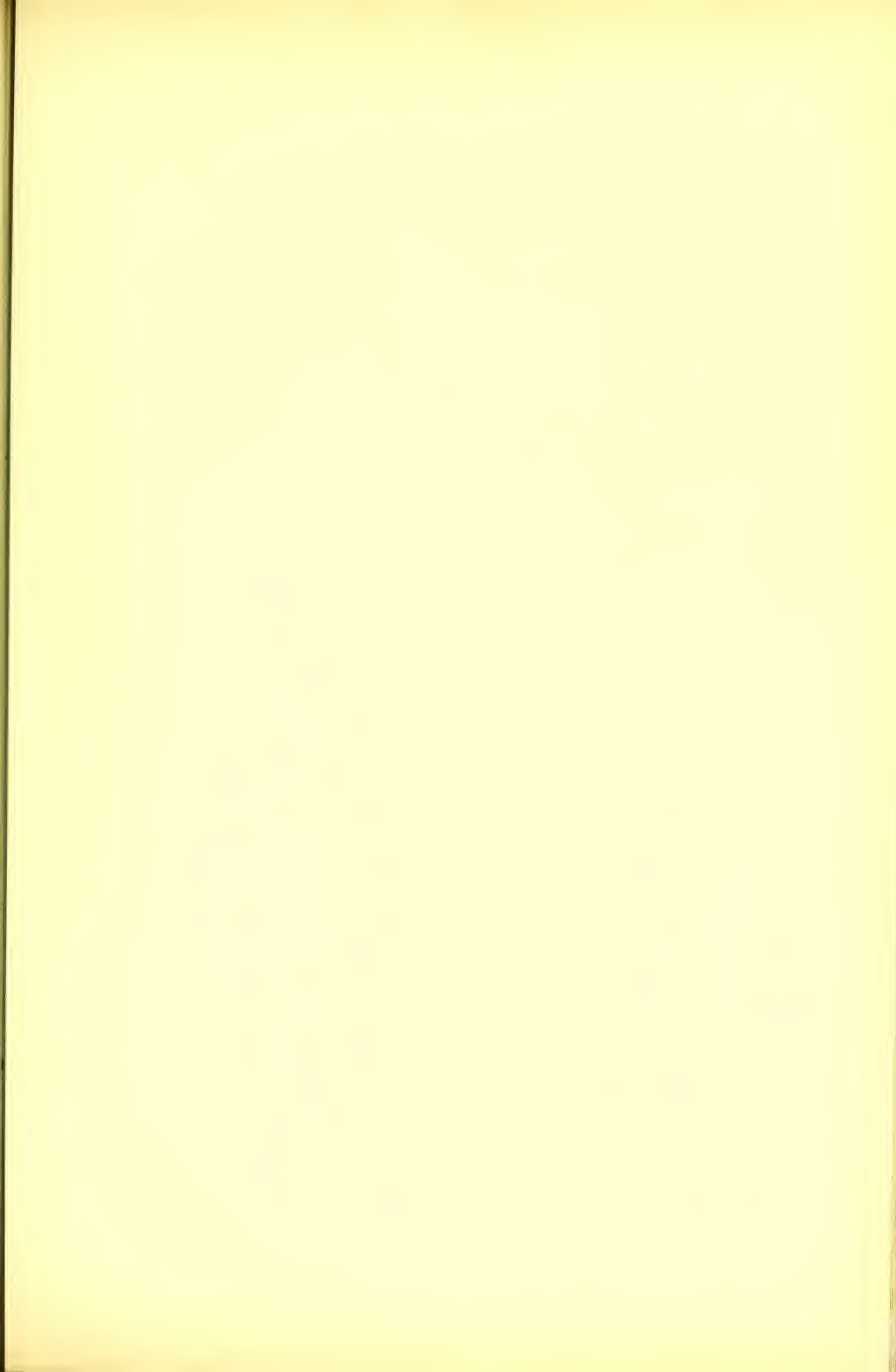
Pulse . . . . .

Respiration . . . . .









—Colour, Brown

RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

[illegible]

Age,

Sex,

—Colour, Brown

| Dates of Observation.   |                  | Dec. 28     | 29  | 30   | 31   | 1893 Jan. 1 | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19 |
|-------------------------|------------------|-------------|-----|------|------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| Days of Disease.        |                  |             |     |      |      |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| Organisms in Blood.     |                  | —           | —   | —    | —    | —           | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —  |
| Respiration per minute. | Pulse per minute | Temperature |     | Time | Time | Time        | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |    |
|                         |                  | F           | C   |      |      |             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |
| 55                      | 120              | 114         | 45° | .    | .    | .           | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .  |
| 50                      | 110              | 112         | 44° | .    | .    | .           | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .  |
| 45                      | 109              | 110         | 43° | .    | .    | .           | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .  |
| 40                      | 90               | 109         | 42° | .    | .    | .           | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .  |
| 35                      | 80               | 107         | 41° | .    | .    | .           | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .  |
| 30                      | 70               | 105         | 40° | .    | .    | .           | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .  |
| 25                      | 60               | 103         | 39° | .    | .    | .           | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .  |
| 20                      | 50               | 101         | 38° | .    | .    | .           | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .  |
| 15                      | 40               | 99          | 37° | .    | .    | .           | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .  |
| 10                      | 30               | 97          | 36° | .    | .    | .           | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .  |
| 5                       | 20               | 95          | 35° | .    | .    | .           | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .  |
|                         |                  | 94          | 34° | .    | .    | .           | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .  |

Swarming over 50 in a field of microscope

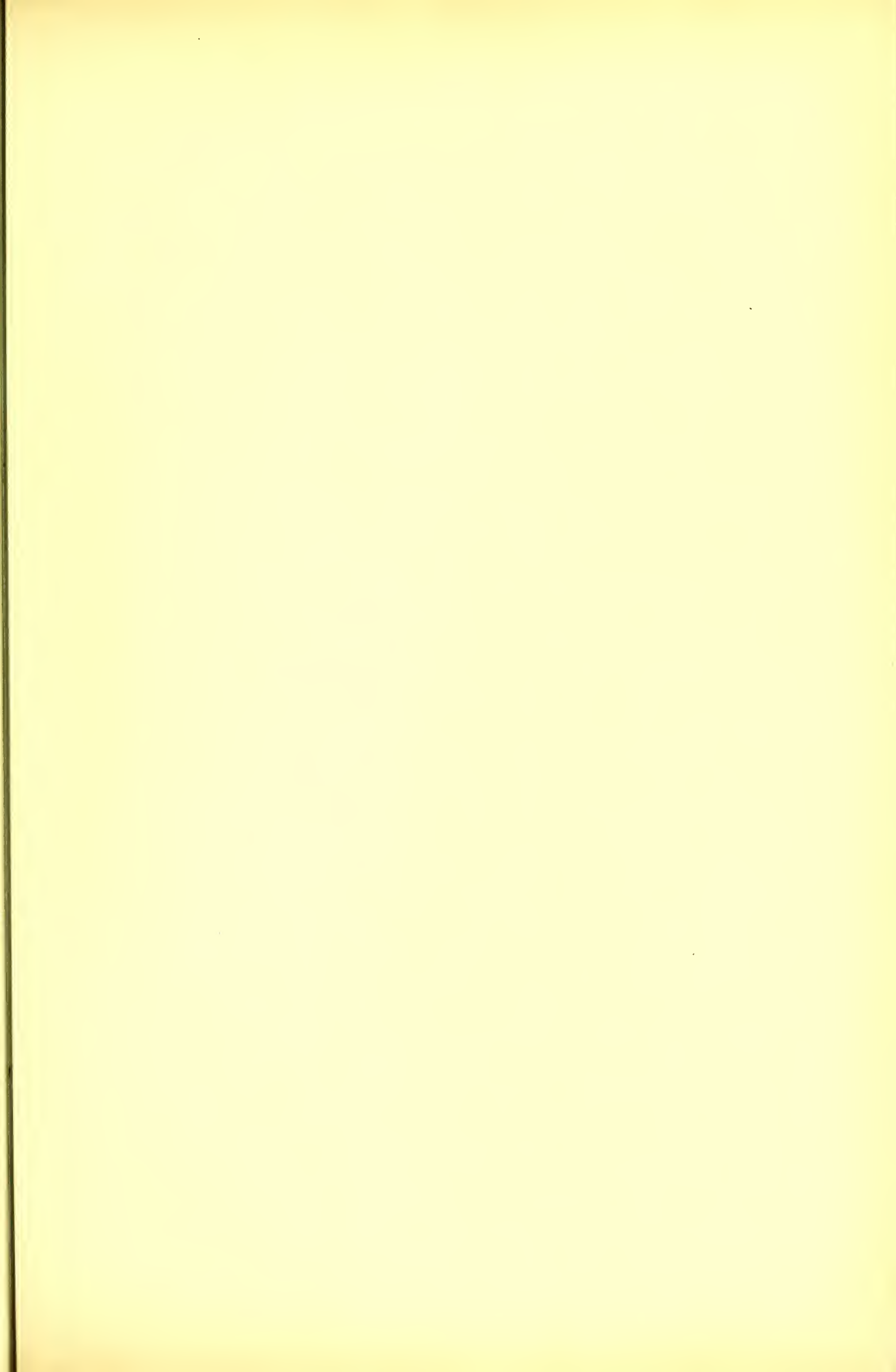
Very numerous = 50

Numerous = 20

Few = 5

Absent

Record of Organisms in Blood





RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

Bull. No. 1

Disease, \_\_\_\_\_ Date of \_\_\_\_\_ Result, \_\_\_\_\_ Age, \_\_\_\_\_ Sex, \_\_\_\_\_ Colour, Brown \_\_\_\_\_ Register No. \_\_\_\_\_

Dates of Observation.

Decr 5

Days of Disease.

Organisms in Blood.

Respiration per minute.

Pulse per minute

Temperature F

Temperature C

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

A.M. P.M.

Record of Organisms in Blood

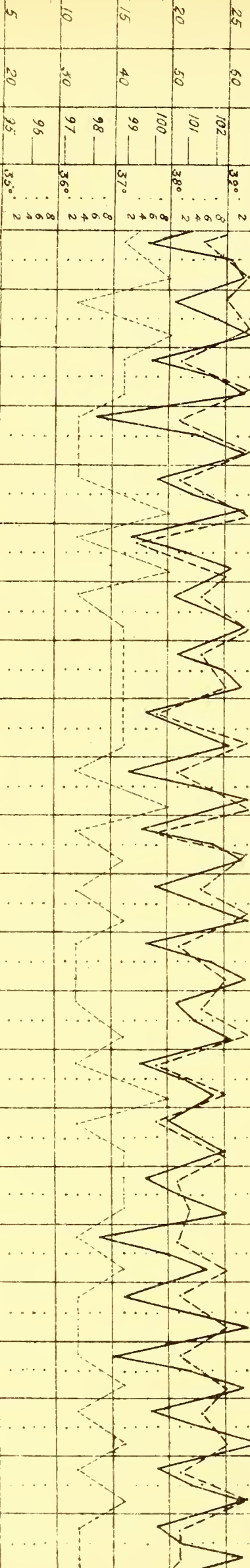
Swarming over 50 in a field of microscope

Light numerous = 50

Numerous = 20

Few = 5

Absent



(S. 415)

Haematology Curve

Drawn & Litho: Govt. Printing Office, Poona 1893.

Pulse

Respiration

Temperature



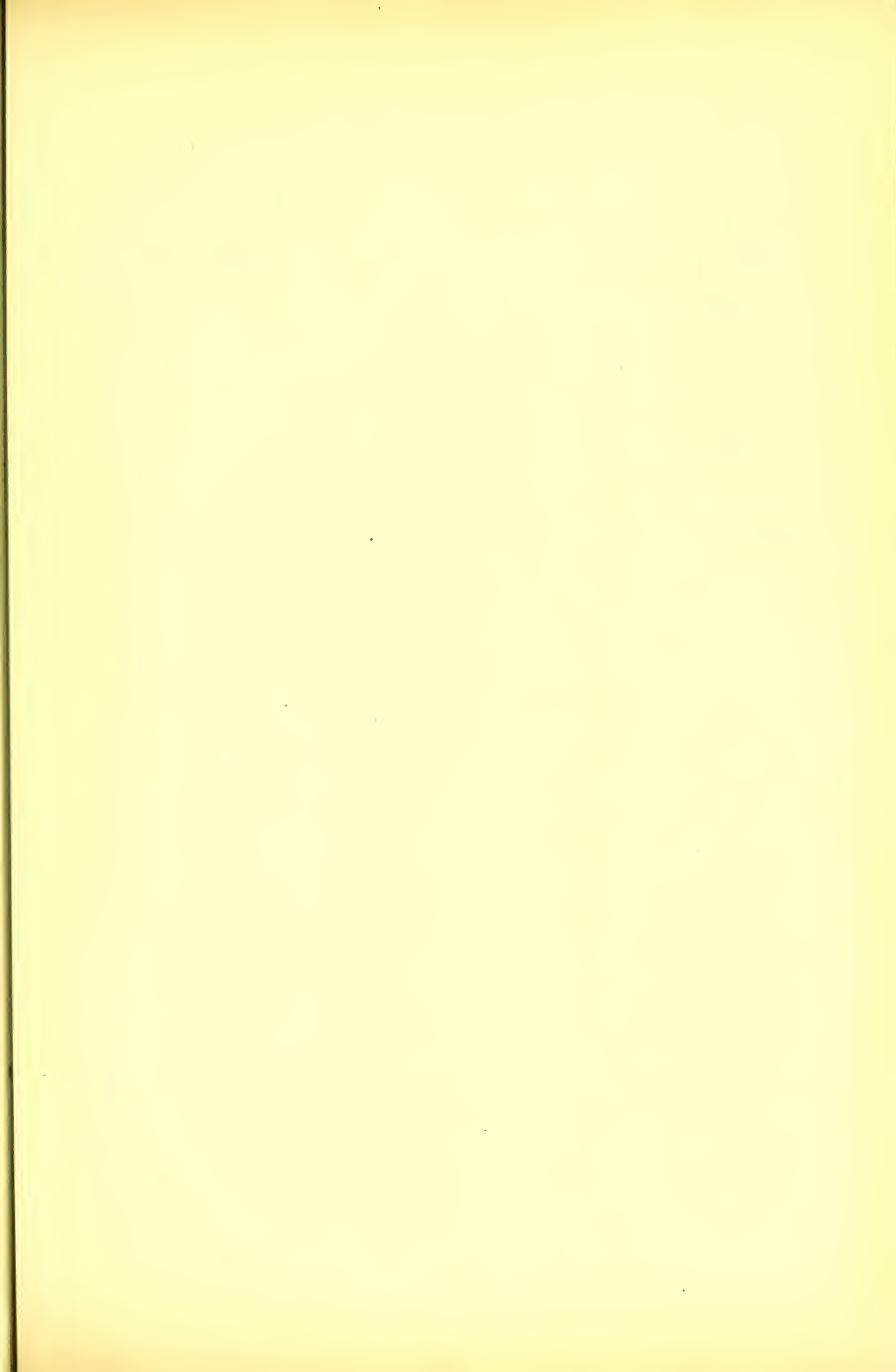
10

1853

Absort

Pulse. ....  
Respiration .....





Colour, Brown.

RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

|          |                |                |                        |                     |
|----------|----------------|----------------|------------------------|---------------------|
| Disease, | <u>Date of</u> | <u>Result,</u> | <u>Date of Result,</u> | <u>Register No.</u> |
|----------|----------------|----------------|------------------------|---------------------|

A9

Sex,

Register No.

Colour, Brown.

[illegible]

(5.415)

Haematozoon Curve  
Temperature.....

Drawn & litho: Govt Photodupco: Office, Poona 1893

Pulse.....  
Respiration.....





RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

Disease, \_\_\_\_\_ Date of \_\_\_\_\_ Result, \_\_\_\_\_ Age, \_\_\_\_\_ Sex, \_\_\_\_\_ Colour, Brown \_\_\_\_\_

Register No. \_\_\_\_\_

| Dates of Observation.         |                        | Sept.<br>27      | 28               | 29   | 30   | Oct.<br>1 | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | Record of Organisms<br>in Blood. |
|-------------------------------|------------------------|------------------|------------------|------|------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------------------|
| Days of Disease               |                        |                  |                  |      |      |           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                  |
| Organisms in Blood.           |                        | —                | —                | —    | —    | —         | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |                                  |
| Respiration<br>per<br>minute. | Pulse<br>per<br>minute | Temperature<br>F | Temperature<br>C | Time | Time | Time      | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |                                  |
|                               |                        |                  |                  | A.M. | P.M. | A.M.      | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M.                             |
|                               |                        | 114              | 45°              | 8    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
| 55                            | 120                    | 113              | 45°              | 2    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
|                               |                        |                  |                  | 8    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
| 50                            | 110                    | 112              | 44°              | 2    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
|                               |                        |                  |                  | 8    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
| 45                            | 100                    | 110              | 43°              | 2    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
|                               |                        |                  |                  | 8    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
| 40                            | 90                     | 109              | 42°              | 2    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
|                               |                        |                  |                  | 8    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
| 35                            | 80                     | 107              | 41°              | 2    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
|                               |                        |                  |                  | 8    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
| 30                            | 70                     | 105              | 40°              | 2    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
|                               |                        |                  |                  | 8    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
| 25                            | 60                     | 103              | 39°              | 2    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
|                               |                        |                  |                  | 8    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
| 20                            | 50                     | 101              | 38°              | 2    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
|                               |                        |                  |                  | 8    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
| 15                            | 40                     | 99               | 37°              | 2    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
|                               |                        |                  |                  | 8    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
| 10                            | 30                     | 97               | 36°              | 2    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
|                               |                        |                  |                  | 8    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
| 5                             | 20                     | 95               | 35°              | 2    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
|                               |                        |                  |                  | 8    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |
|                               |                        | 94               | 34°              | 2    | .    | .         | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    | .    |                                  |

Swarming  
over 50 in  
a field of  
microscope

Very  
numerous  
= 50

Numerous  
= 20

Few  
= 5

Absent

Hematocrit Curve \_\_\_\_\_  
Temperature.....

Pulse.....  
Respiration.....

Absent  
Few = 5  
Numerous = 20  
Very numerous = 50  
Swarming over 50 in a field of microscope





Colour, Brown

RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

1

Absent

*Record of Organisms  
in Blood.*

Pulse.....  
Respiration.....





Disease, "Rat Surra" Through Donkey \_\_\_\_\_ Date of Inoculation, 22. 8. 92 \_\_\_\_\_ Result, \_\_\_\_\_ Age, \_\_\_\_\_ Sex, \_\_\_\_\_ Colour, Brown \_\_\_\_\_

| Dates of Observation.    | Days of Disease. | Organisms in Blood. | Temperature |   | Pulse      |            | Respiration |            | Time |     |
|--------------------------|------------------|---------------------|-------------|---|------------|------------|-------------|------------|------|-----|
|                          |                  |                     | F           | C | per minute | per minute | per minute  | per minute | AM.  | PM. |
| 1892 Aug <sup>t</sup> 12 | 13               |                     |             |   |            |            |             |            |      |     |
|                          | 14               |                     |             |   |            |            |             |            |      |     |
|                          | 15               |                     |             |   |            |            |             |            |      |     |
|                          | 16               |                     |             |   |            |            |             |            |      |     |
|                          | 17               |                     |             |   |            |            |             |            |      |     |
|                          | 18               |                     |             |   |            |            |             |            |      |     |
|                          | 19               |                     |             |   |            |            |             |            |      |     |
|                          | 20               |                     |             |   |            |            |             |            |      |     |
|                          | 21               |                     |             |   |            |            |             |            |      |     |
|                          | 22               |                     |             |   |            |            |             |            |      |     |
|                          | 23               |                     |             |   |            |            |             |            |      |     |
|                          | 24               |                     |             |   |            |            |             |            |      |     |
|                          | 25               |                     |             |   |            |            |             |            |      |     |
|                          | 26               |                     |             |   |            |            |             |            |      |     |
|                          | 27               |                     |             |   |            |            |             |            |      |     |
|                          | 28               |                     |             |   |            |            |             |            |      |     |
|                          | 29               |                     |             |   |            |            |             |            |      |     |
|                          | 30               |                     |             |   |            |            |             |            |      |     |
|                          | 31               |                     |             |   |            |            |             |            |      |     |
| Sep <sup>t</sup> 1       | 2                |                     |             |   |            |            |             |            |      |     |
|                          | 3                |                     |             |   |            |            |             |            |      |     |

Record of Organisms in Blood.

Swarming over 50 in a field of microscop.

Very numerous = 30

Numerous = 20

Few = 5

Absent

(S. 415) Hematozoan Curve \_\_\_\_\_ Drawn & Litho. Govt. Photodupl. Office, Poona, 1893.

Temperature..... Pulse..... Respiration.....

Inoculated Subcutaneously with 1.0 cc of blood containing very numerous Hematozoa taken from the Jugular Vein of Donkey. No. 1

## EXPERIMENT No. I.

RABBIT INOCULATED WITH BLOOD DERIVED FROM THE RAT PREVIOUSLY PASSED THROUGH THE HORSE.

- 21st, July 1892. 5-20 P.M. --Inoculated the animal subcutaneously in the right inguinal region with .75 c.c. of blood containing numerous hæmatozoa drawn from the heart of Horse No. LXII, fifteen minutes after death. This horse was inoculated with Rat's (*Mus decumanus*) blood. Temp. P.M. 39.8 °C.
- 22nd.—Temp. A.M. 39.4 °C. No hæmatozoa in the blood. Temp. P.M. 40.0 °C.
- 23rd.—Temp. A.M. 39.5 °C. No hæmatozoa in the blood. Temp. P.M. 40.1 °C.
- 24th.—Temp. A.M. 39.8 °C. No hæmatozoa in the blood. Temp. P.M. 40.2 °C.
- 25th.—The blood on microscopic examination presents a healthy colour, the red corpuscles do not form healthy rouleaux; but the white corpuscles are not increased in number. Temp. A.M. 39.3 °C. There are no hæmatozoa. Temp. P.M. 39.8 °C.
- 26th.—Temp. A.M. 39.6 °C. There is no swelling or œdema at the seat of inoculation, nor has there been any. There are no hæmatozoa in the blood. Temp. 40.0 °C.
- 27th.—Temp. A.M. 39.3 °C. The animal appears bright and healthy, appetite good. There are no hæmatozoa in the blood. Temp. P.M. 40.0 °C.
- 28th.—Temp. A.M. 39.6 °C. Condition unchanged. The tunicae vaginales testes do not contain any fluid. There are no hæmatozoa in the blood. Temp. P.M. 40.0 °C.
- 29th.—Temp. A.M. 39.4 °C. Hæmatozoa absent from the blood. Temp. P.M. 40.0 °C.
- 30th.—Temp. A.M. 40.0 °C. There are no hæmatozoa in the blood. Temp. P.M. 39.3 °C.
- 31st.—The animal does not appear so well this morning, but there is no swelling, &c., at the seat of inoculation. Temp. A.M. 38.6 °C. There are no hæmatozoa in the blood. Temp. P.M. 38.5 °C.
- 1st August.—Death occurred in the early morning.





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B.  
RAT SURRA.

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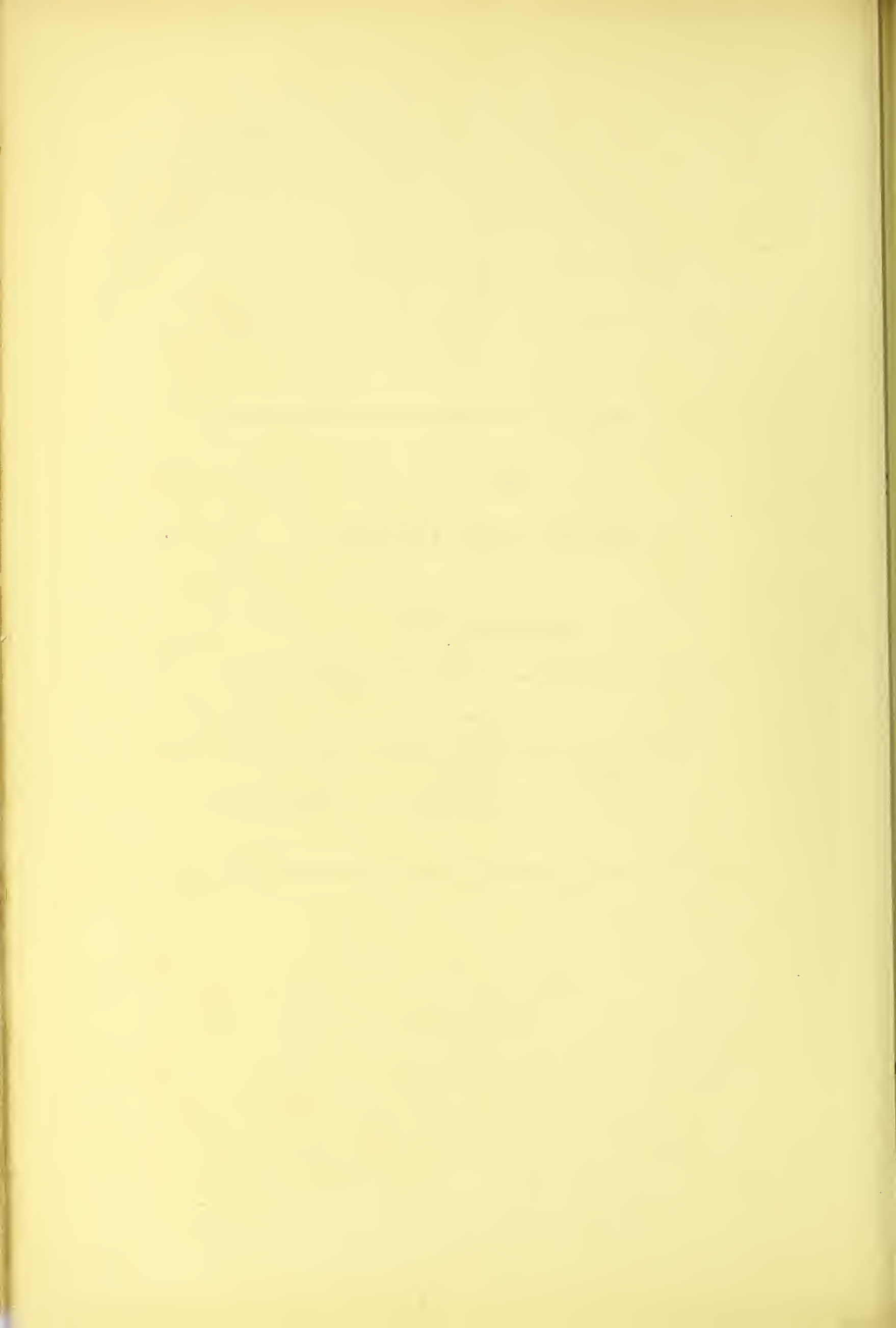
APPENDIX VII.

PROLONGED GASTRIC INGESTION OF RAT'S EXCREMENT MIXED WITH CORN.

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|            |        |           |       |     |                 |
|------------|--------|-----------|-------|-----|-----------------|
| IN POONA,  | RESULT | NEGATIVE, | HORSE | NO. | LXXV.           |
| IN BOMBAY, | „      | POSITIVE, | „     | „   | XCI.            |
| „          | „      | NEGATIVE, | „     | „   | LXXXIX CROSSED. |

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PROLONGED GASTRIC INGESTION OF RAT'S (*MUS DECUMANUS*) EXCREMENT MIXED WITH CORN.

Horse Surra is enzootic in Bombay with an average rainfall of 72·7 inches, and mean yearly humidity of 81 per cent. of saturation; but the reverse is the case in Poona, on the Deccan plateau at an elevation of 1,857 feet with an average rainfall of 27·6 inches, and mean yearly humidity of 53 per cent of saturation. The following experiments were undertaken with a view to ascertain whether the excreta of rats—in whose blood the infusorian was present at the time of its collection—could produce the disease when mixed with the grain of the horses under experiment.

(i) At Poona on the Deccan Plateau.

(ii) In Bombay.

HORSE No. LXXV.

| Date.  | Temperature °C. |        |        | Pulse. |      | Respiration. |    | Quantity of excrement of rats given daily. | Hæmatozoa in Blood. | Urine.           |         |           |               | Temperature in shade °F |        | Humidity. |
|--|-----------------|--------|--------|--------|------|--------------|----|--|---------------------|------------------|---------|-----------|---------------|-------------------------|--------|-----------|
|  | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.           | M. |  |                     | Colour.          | Sp. Gr. | Reaction. | Albumen.      | Maxim.                  | Minim. |           |
| 1892.  |                 |        |        |        |      |              |    | Grammes.                                   |                     |                  |         |           |               |                         |        |           |
| November 20.   | ...             | ...    | 37·6   | ...    | 36   | ...          | 24 | Nil.                                       | Healthy.            | Turbid.          | 1,044   | Alkaline. | Nil.          | 84·5                    | 50·0   | 64        |
| " 21.  | 36·6            | 37·4   | 37·8   | 32     | 36   | 20           | 28 | "  | "                   | "                | 1,042   | "         | "             | 86·0                    | 50·0   | 74        |
| " 22.  | 37·4            | 37·8   | 38·2   | 36     | 40   | 24           | 24 | "  | "                   | "                | 1,033   | "         | "             | 85·0                    | 51·0   | 65        |
| " 23.  | 37·7            | 37·9   | 38·1   | 32     | 36   | 12           | 24 | "  | "                   | "                | 1,030   | "         | "             | 85·5                    | 51·9   | 69        |
| " 24.  | 37·3            | 37·3   | 37·4   | 32     | 36   | 20           | 36 | "  | "                   | "                | 1,033   | "         | "             | 83·6                    | 51·0   | 70        |
| " 25.  | 37·2            | 38·8   | 38·0   | 32     | 40   | 20           | 24 | "  | "                   | "                | 1,032   | "         | "             | 83·1                    | 52·4   | 64        |
| " 26.  | 37·2            | 37·7   | 37·7   | 32     | 36   | 16           | 16 | vi   | "                   | "                | 1,030   | "         | "             | 82·1                    | 52·9   | 62        |
| From this date, rat's excrement was mixed with the corn, and given to the animal daily.                      |                 |        |        |        |      |              |    |  |                     |                  |         |           |               |                         |        |           |
| " 27.  | 37·2            | 37·7   | 37·8   | 32     | 36   | 20           | 20 | vi   | Absent.             | "                | 1,034   | "         | "             | 80·0                    | 52·4   | 60        |
| Visible mucous membranes are injected, and there are numerous small petechiæ scattered over the conjunctivæ. |                 |        |        |        |      |              |    |  |                     |                  |         |           |               |                         |        |           |
| " 28.  | 37·5            | 37·5   | 38·1   | 32     | 36   | 20           | 24 | vi   | "                   | "                | 1,040   | "         | "             | 81·1                    | 51·5   | 66        |
| " 29.  | 37·4            | 37·3   | 37·7   | 32     | 36   | 20           | 20 | vi   | "                   | "                | 1,042   | "         | "             | 81·1                    | 51·0   | 63        |
| " 30.  | 37·5            | 37·5   | 37·6   | 36     | 36   | 20           | 20 | ix   | "                   | No urine passed. |         |           |               | 79·6                    | 48·0   | 55        |
| Mucous membranes clean, and conjunctivæ are free from petechiæ; appetite good.                               |                 |        |        |        |      |              |    |  |                     |                  |         |           |               |                         |        |           |
| December 1.  | 36·7            | 37·6   | 37·5   | 36     | 36   | 16           | 20 | ix   | "                   | "                | 1,038   | "         | "             | 79·1                    | 48·0   | 51        |
| " 2.   | 37·3            | 37·3   | 37·4   | 36     | 28   | 20           | 16 | viii                                       | "                   | "                | 1,042   | "         | "             | 80·6                    | 49·0   | 63        |
| " 3.   | 37·2            | 37·7   | 37·7   | 32     | 32   | 16           | 16 | vii  | "                   | "                | 1,038   | "         | "             | 83·6                    | 51·9   | 61        |
| " 4.   | 37·0            | 37·4   | 38·0   | 32     | 36   | 16           | 20 | v  | "                   | "                | 1,036   | "         | "             | 84·0                    | 50·5   | 55        |
| " 5.   | 37·3            | 37·8   | 37·5   | 36     | 36   | 16           | 20 | xii  | "                   | "                | 1,040   | "         | "             | 83·6                    | 49·0   | 64        |
| There are a few petechiæ on the right conjunctiva.   |                 |        |        |        |      |              |    |  |                     |                  |         |           |               |                         |        |           |
| " 6.   | 37·6            | 37·6   | 37·7   | 32     | 36   | 16           | 28 | xiii                                       | "                   | "                | 1,042   | "         | "             | 83·6                    | 50·0   | 62        |
| " 7.   | 37·6            | 38·0   | 37·6   | 28     | 38   | 12           | 16 | iv   | "                   | "                | 1,040   | "         | "             | 85·5                    | 51·0   | 53        |
| " 8.   | 37·0            | 37·5   | 37·6   | 28     | 38   | 20           | 16 | ii   | "                   | "                | 1,046   | "         | "             | 86·5                    | 50·0   | 64        |
| " 9.   | 37·0            | 37·2   | 37·6   | 28     | 28   | 16           | 20 | ix   | "                   | "                | 1,054   | "         | "             | 87·5                    | 50·5   | 69        |
| No petechiæ on the conjunctivæ, pulse hard, and of high tension.   |                 |        |        |        |      |              |    |  |                     |                  |         |           |               |                         |        |           |
| " 10.  | 37·3            | 37·4   | 37·4   | 28     | 28   | 16           | 20 | ix   | "                   | "                | 1,052   | "         | "             | 87·5                    | 53·9   | 70        |
| " 11.  | 37·2            | 37·2   | 37·6   | 32     | 28   | 16           | 24 | v  | "                   | "                | 1,048   | "         | "             | 86·0                    | 54·9   | 67        |
| " 12.  | 37·2            | 37·5   | 37·5   | 32     | 28   | 12           | 20 | v  | "                   | "                | 1,038   | "         | "             | 86·5                    | 51·9   | 59        |
| " 13.  | 37·3            | 37·5   | 37·6   | 28     | 28   | 12           | 16 | iv   | "                   | "                | 1,046   | "         | "             | 84·5                    | 52·4   | 59        |
| " 14.  | 37·4            | 37·5   | 37·8   | 28     | 28   | 16           | 12 | vi   | "                   | "                | 1,054   | "         | Slight Trace. | 83·6                    | 50·5   | 64        |
| " 15.  | 37·4            | 37·6   | 37·6   | 24     | 32   | 12           | 20 | viii                                       | "                   | "                | 1,054   | "         | Nil.          | 82·6                    | 53·9   | 75        |
| " 16.  | 37·4            | 37·7   | 38·1   | 24     | 32   | 20           | 24 | vii  | "                   | "                | 1,052   | "         | "             | 87·5                    | 60·4   | 74        |
| " 17.  | 37·6            | 37·8   | 37·8   | 28     | 28   | 16           | 16 | ii   | "                   | "                | 1,046   | "         | "             | 85·0                    | 64·9   | 76        |
| " 18.  | 37·5            | 37·5   | 37·8   | 24     | 28   | 20           | 24 | v  | "                   | "                | 1,044   | "         | "             | 87·0                    | 61·4   | 66        |
| " 19.  | 37·6            | 38·0   | 38·2   | 28     | 32   | 16           | 20 | v  | "                   | "                | 1,048   | "         | "             | 87·0                    | 58·9   | 57        |
| " 20.  | 36·8            | 37·7   | 38·0   | 28     | 28   | 16           | 20 | vi   | "                   | "                | 1,036   | "         | "             | 84·0                    | 53·4   | 69        |
| " 21.  | 38·0            | 38·0   | 37·7   | 28     | 28   | 16           | 16 | vii  | "                   | "                | 1,040   | "         | "             | 83·1                    | 48·5   | 60        |
| " 22.  | 36·8            | 38·2   | 39·3   | 32     | 36   | 12           | 28 | v  | Absent.             | "                | 1,048   | Alkaline. | Nil.          | 84·5                    | 49·0   | 61        |
| Maggots in the frog and foot, cleaned and dressed.   |                 |        |        |        |      |              |    |  |                     |                  |         |           |               |                         |        |           |
| " 23.  | 37·4            | 38·4   | 38·5   | 28     | 32   | 12           | 24 | v  | "                   | "                | 1,056   | "         | "             | 86·5                    | 49·5   | 65        |
| " 24.  | 36·8            | 37·8   | 37·8   | 28     | 28   | 12           | 20 | iii  | "                   | "                | 1,030   | "         | "             | 86·5                    | 51·5   | 65        |
| " 25.  | 36·6            | 37·0   | 37·2   | 24     | 36   | 12           | 16 | vi   | "                   | "                | 1,033   | "         | "             | 85·0                    | 57·4   | 71        |
| " 26.  | 37·1            | 37·7   | 37·6   | 24     | 36   | 16           | 16 | vi   | "                   | "                | 1,029   | "         | "             | 86·0                    | 56·4   | 76        |
| " 27.  | 37·3            | 37·6   | 37·8   | 28     | 28   | 16           | 16 | iv   | "                   | "                | 1,042   | "         | "             | 84·0                    | 56·4   | 64        |
| " 28.  | 37·2            | 37·6   | 37·5   | 32     | 28   | 12           | 20 | ii   | "                   | "                | 1,018   | "         | "             | 86·0                    | 58·9   | 57        |
| " 29.  | 36·7            | 37·6   | 37·5   | 32     | 28   | 12           | 20 | ii   | "                   | "                | 1,030   | "         | "             | 83·6                    | 57·9   | 80        |
| " 30.  | 36·7            | 37·4   | 37·2   | 28     | 24   | 12           | 16 | ix   | "                   | "                | 1,054   | "         | "             | 84·0                    | 55·9   | 77        |
| " 31.  | 37·4            | 37·2   | 37·5   | 28     | 24   | 12           | 12 | x  | "                   | "                | 1,040   | "         | "             | 85·0                    | 55·4   | 65        |

1893.

January 1... 37·5 | 38·5 | 40·1 | 28 | 36 | 12 | 12 | ix | " | " | 1,042 | " | " | 85·5 | 55·4 | 69

Maggots in the foot, cleaned and dressed.

| Date.         | Temperature °C. |        |        | Pulse. |      | Respiration. |       | Quantity of excrement of rats given daily. | Hæmatozoa in Blood. | Urine.  |         |              |          | Temperature in shade °F |          | Humidity. |
|---------------|-----------------|--------|--------|--------|------|--------------|-------|--|---------------------|---------|---------|--------------|----------|-------------------------|----------|-----------|
|               | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A. M.        | P. M. |  |                     | Colour. | Sp. Gr. | Re-action.   | Albumen. | Maximum.                | Minimum. |           |
| 1893.         |                 |        |        |        |      |              |       | Grammes.                                   |                     |         |         |              |          |                         |          |           |
| January 2...  | 37.6            | 38.0   | 38.0   | 32     | 28   | 16           | 16    | x  | "                   | "       | 1.016   | "            | "        | 86.0                    | 56.9     | 89        |
| " 3...        | 37.3            | 38.1   | 38.3   | 28     | 32   | 16           | 16    | x  | "                   | "       | 1.054   | "            | "        | 84.0                    | 53.9     | 85        |
| " 4...        | 37.2            | 37.4   | 37.8   | 24     | 28   | 16           | 20    | x  | "                   | "       | 1.014   | "            | "        | 82.1                    | 59.4     | 65        |
| " 5...        | 37.6            | 37.7   | 37.8   | 24     | 24   | 12           | 12    | x  | "                   | "       | 1.038   | "            | "        | 85.5                    | 60.9     | 72        |
| " 6...        | 37.1            | 37.6   | 37.8   | 24     | 32   | 12           | 20    | xii  | "                   | "       | 1.050   | "            | "        | 81.6                    | 56.4     | 83        |
| " 7...        | 37.3            | 37.4   | 37.4   | 28     | 28   | 12           | 20    | x  | "                   | "       | 1.016   | "            | "        | 82.1                    | 58.9     | 77        |
| " 8...        | 36.7            | 37.5   | 38.1   | 24     | 36   | 12           | 16    | x  | "                   | "       | 1.010   | "            | "        | 82.1                    | 59.4     | 72        |
| " 9...        | 37.3            | 37.6   | 37.5   | 28     | 32   | 12           | 20    | x  | "                   | "       | 1.032   | "            | "        | 83.1                    | 56.9     | 61        |
| " 10...       | 37.4            | 37.6   | 37.5   | 24     | 28   | 12           | 16    | x  | "                   | "       | 1.038   | "            | "        | 82.6                    | 51.9     | 49        |
| " 11...       | 37.1            | 37.4   | 37.1   | 24     | 28   | 12           | 16    | xii  | "                   | "       | 1.014   | "            | "        | 80.1                    | 46.5     | 50        |
| " 12...       | 37.0            | 27.5   | 38.1   | 24     | 28   | 12           | 16    | xii  | "                   | "       | 1.014   | "            | "        | 81.6                    | 49.0     | 52        |
| " 13...       | 36.7            | 37.0   | 37.8   | 24     | 28   | 12           | 12    | xii  | "                   | "       | 1.014   | "            | "        | 81.0                    | 49.5     | 61        |
| " 14...       | 37.1            | 37.5   | 37.1   | 24     | 28   | 12           | 16    | xii  | "                   | "       | 1.032   | "            | "        | 85.5                    | 50.5     | 69        |
| " 15...       | 36.6            | 37.3   | 37.4   | 28     | 28   | 12           | 16    | xii  | "                   | "       | 1.022   | "            | "        | 86.0                    | 51.0     | 64        |
| " 16...       | 36.5            | 37.1   | 37.2   | 28     | 32   | 12           | 16    | x  | "                   | "       | 1.010   | "            | "        | 86.0                    | 51.9     | 74        |
| " 17...       | 36.1            | 37.3   | 37.2   | 28     | 24   | 12           | 12    | xv   | "                   | "       | 1.012   | "            | "        | 85.5                    | 50.0     | 77        |
| " 18...       | 36.4            | 37.5   | 38.0   | 24     | 28   | 12           | 16    | xii  | "                   | "       | 1.030   | "            | "        | 85.5                    | 51.0     | 71        |
| " 19...       | 35.8            | 37.0   | 37.2   | 24     | 36   | 12           | 12    | xii  | "                   | "       | 1.038   | "            | "        | 84.0                    | 49.5     | 64        |
| " 20...       | 36.3            | 37.2   | 37.4   | 24     | 24   | 12           | 12    | x  | "                   | "       | 1.018   | "            | "        | 86.0                    | 50.0     | 62        |
| " 21...       | 36.8            | 37.4   | 37.6   | 24     | 28   | 12           | 12    | x  | "                   | "       | 1.030   | "            | "        | 81.1                    | 51.9     | 62        |
| " 22...       | 36.5            | 37.1   | 37.4   | 20     | 28   | 12           | 12    | x  | "                   | "       | 1.030   | "            | "        | 80.6                    | 52.4     | 54        |
| " 23...       | 36.1            | 36.6   | 37.3   | 20     | 28   | 12           | 12    | x  | "                   | "       | 1.026   | "            | "        | 87.0                    | 52.4     | 72        |
| " 24...       | 36.4            | 36.7   | 37.8   | 28     | 28   | 12           | 12    | x  | "                   | "       | 1.028   | "            | "        | 88.0                    | 47.0     | 78        |
| " 25...       | 36.3            | 37.1   | 37.1   | 28     | 28   | 12           | 12    | x  | "                   | "       | 1.030   | "            | "        | 88.0                    | 52.9     | 65        |
| " 26...       | 36.7            | 37.1   | 37.2   | 24     | 32   | 12           | 12    | xii  | "                   | "       | 1.036   | "            | "        | 86.0                    | 51.5     | 62        |
| " 27...       | 36.4            | 37.1   | 37.3   | 24     | 28   | 12           | 12    | x  | "                   | "       | 1.030   | "            | "        | 86.5                    | 52.4     | 56        |
| " 28...       | 37.3            | 37.4   | 37.4   | 28     | 28   | 12           | 16    | x  | "                   | "       | 1.052   | "            | "        | 90.0                    | 52.4     | 71        |
| " 29...       | 36.6            | 36.5   | 36.8   | 28     | 28   | 12           | 12    | x  | "                   | "       | 1.035   | "            | "        | 88.5                    | 48.0     | 70        |
| " 30...       | 35.6            | 35.8   | 36.8   | 20     | 24   | 12           | 12    | x  | "                   | "       | 1.020   | "            | "        | 89.0                    | 47.5     | 66        |
| " 31...       | 35.7            | 35.8   | 36.6   | 20     | 24   | 8            | 12    | x  | "                   | "       | 1.030   | "            | "        | 85.5                    | 47.5     | 44        |
| February 1... | 35.8            | 36.4   | 37.4   | 20     | 24   | 12           | 12    | v  | "                   | "       | 1.012   | "            | "        | 88.0                    | 48.5     | 56        |
| " 2...        | 35.3            | 35.8   | 36.6   | 20     | 24   | 12           | 8     | v  | "                   | "       | 1.028   | "            | "        | 86.0                    | 50.5     | 42        |
| " 3...        | 35.7            | 36.2   | 36.7   | 20     | 24   | 12           | 16    | v  | "                   | "       | 1.014   | "            | "        | 86.5                    | 50.0     | 49        |
| " 4...        | 36.0            | 36.0   | 36.8   | 24     | 28   | 12           | 8     | v  | "                   | "       | 1.016   | "            | "        | 88.5                    | 52.9     | 48        |
| " 5...        | 36.2            | 36.8   | 37.1   | 20     | 28   | 8            | 12    | v  | "                   | "       | 1.028   | "            | "        | 91.0                    | 54.4     | 41        |
| " 6...        | 35.4            | 36.2   | 36.6   | 20     | 28   | 8            | 12    | v  | "                   | "       | 1.010   | "            | "        | 88.5                    | 56.4     | 78        |
| " 7 ..        | 36.3            | 36.2   | 36.3   | 24     | 32   | 12           | 12    | v  | "                   | Clear.  | 1.040   | Feebly acid. | "        | 83.6                    | 46.5     | 38        |
| " 8...        | 36.7            | ...    | ...    | 32     | ...  | 16           | ...   | Nil.                                       | "                   | "       | 1.036   | Acid.        | "        | 81.6                    | 46.5     | 25        |

6 A.M.—The animal was found lying, unable to rise. It was completely gorged, having eaten all its fodder, and the greater part of its bedding. Chloroform was administered, and death took place at noon.

*Autopsy 4.30 P.M.*—The body is fairly well nourished, and there is a total absence of œdema from the extremities and the under-surface of the abdomen.

*Thorax.*—Both pleural cavities contain a few ounces of a turbid, orange-coloured fluid, but there are no pleural adhesions.

*The lungs* appear large, the apices are studded over with smooth projections of their tissue, considerably dilated (emphysematous). The lungs, in general, are greyish in colour, but are dotted here and there with sub-pleural extravasations, dark purple in colour, circular in form, and varying in diameter from  $\frac{1}{8}$ th to  $\frac{1}{3}$ rd of an inch.

*On section*, the pulmonary tissues present a very dark red colour, whilst on pressure a frothy blood-stained fluid exuded from the cut ends of the bronchial tubes.

*The pericardium* contains four ounces of a turbid, orange-coloured fluid.

*The heart* is large, and weighs 6 lbs. 14 ozs. when divested of its contents. The base is surrounded with a certain amount of yellow gelatinous material, which also accompanies the right and left coronary vessels in their course. There are sub-pericardial petechiæ dotted over the surface of this material, especially along the course of the coronary vessels. The surface of the right ventricle presents a slight amount of tendinous deposit (Maculæ albidæ).

*On Section.*—*The right auricle* contains dark fluid blood. The lining membrane is pale and free from extravasations except at the margin of the auriculo-ventricular opening, where one almost oblong in form, measuring  $1'' \times \frac{5}{8}''$ , is observed just over the attachment of the segment which is situated on the left side of the opening.

*The right Ventricle* is dilated and contains a considerable quantity of dark fluid blood, but no clots. The lining membrane is pale, but there are numerous small sub-endocardial extravasations, which are grouped into patches more especially towards the upper end of the musculi-papillares, and just below the attachment of the Chordæ-tendinæ. The valves present no alteration.

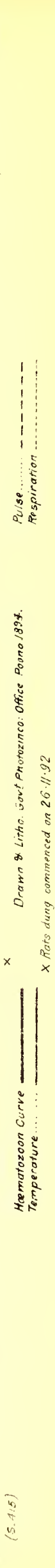
*The left auricle* contains a small quantity of blood; lining membrane pale, except on the inner wall, where two dark coloured extravasations are situated; one measures  $\frac{3}{4}'' \times \frac{5}{16}''$  the other  $\frac{3}{4}'' \times \frac{1}{4}''$ .



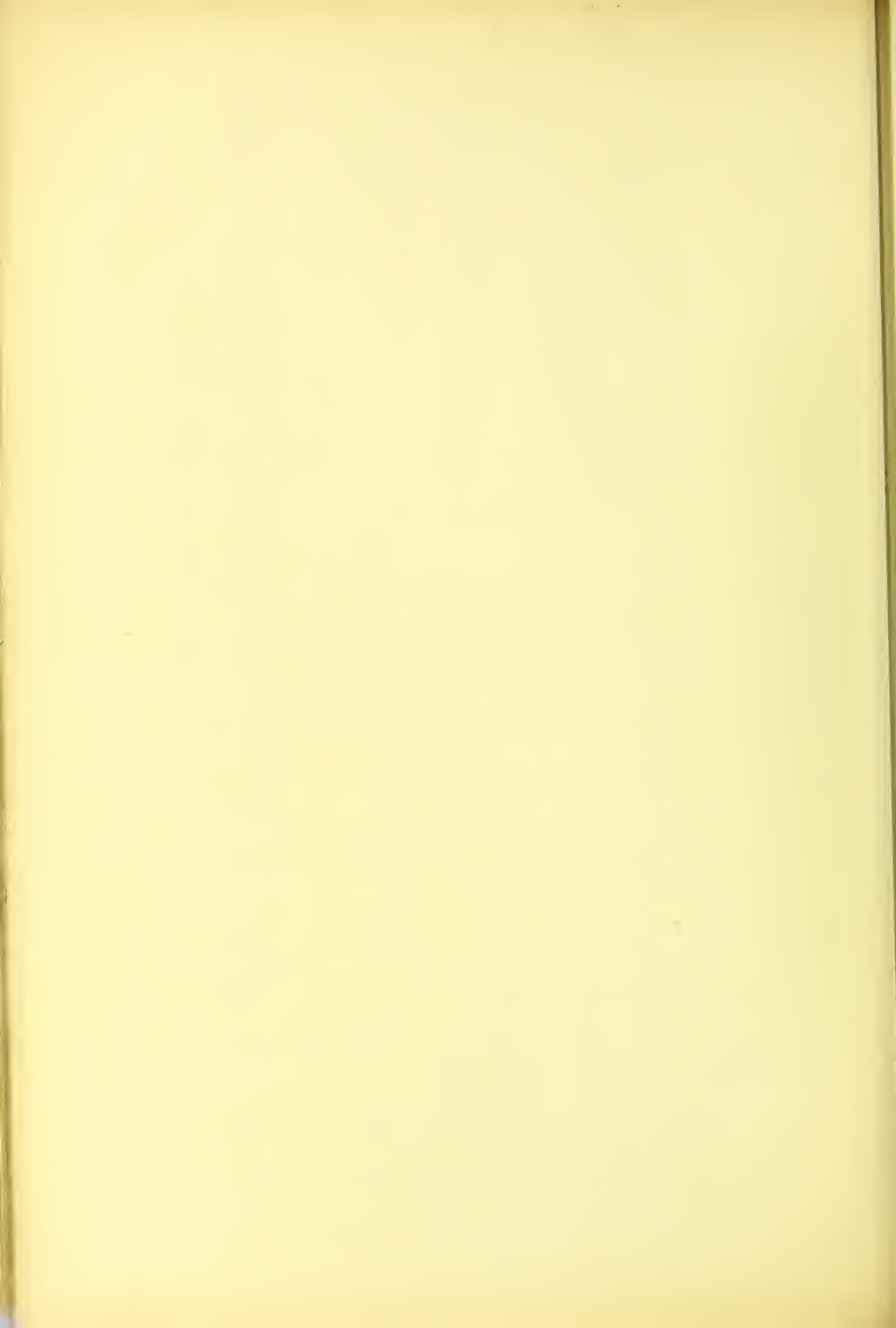
RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

Disease, Australian Gelding, fed upon Rat Excrement and corn mixed in Poona; during a period of 74 days Age, Aged Sex, Gelding Colour, Brown  
Date of Nov 92 Result, Death Date of Result, 8. Feb. 93 Register No. LXXV

| Dates of Observation          |                        | Nov/92      |     | 20                | 21                | 22                | 23                | 24                | 25                | 26                | 27                | 28                | 29                | 30                | Decr.             | 1                 | 2                 | 3                 | 4                 | 5                 | 6                 | 7                 | 8                 | 9                 | 10                | 11                | 12 |
|-------------------------------|------------------------|-------------|-----|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|----|
| Days of Disease               |                        |             |     |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
| Organisms in Blood.           |                        |             |     |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
| Respiration<br>per<br>minute. | Pulse<br>per<br>minute | Temperature |     | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. | Time<br>A.M. P.M. |    |
|                               |                        | F           | C   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
|                               |                        | 114         | —   | 8                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
| 55                            | 120                    | 113         | 45° | 2                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
|                               |                        | 112         | —   | 8                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
| 50                            | 110                    |             | 44° | 2                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
|                               |                        | 111         | —   | 8                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
| 45                            | 100                    | 110         | —   | 2                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
|                               |                        | 109         | —   | 8                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
| 40                            | 90                     | 108         | —   | 2                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
|                               |                        | 107         | —   | 8                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
| 35                            | 80                     | 106         | —   | 2                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
|                               |                        | 105         | —   | 8                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
| 30                            | 70                     | 104         | —   | 2                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
|                               |                        | 103         | —   | 8                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
| 25                            | 50                     | 102         | —   | 2                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
|                               |                        | 101         | —   | 8                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
| 20                            | 50                     | 100         | —   | 2                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
|                               |                        | 99          | —   | 8                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
| 15                            | 40                     | 98          | —   | 2                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
|                               |                        | 97          | —   | 8                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
| 10                            | 30                     | 96          | —   | 2                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
|                               |                        | 95          | —   | 8                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
| 5                             | 20                     | 94          | —   | 2                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
|                               |                        | 94          | —   | 8                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |
|                               |                        |             | 34° | 2                 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |    |

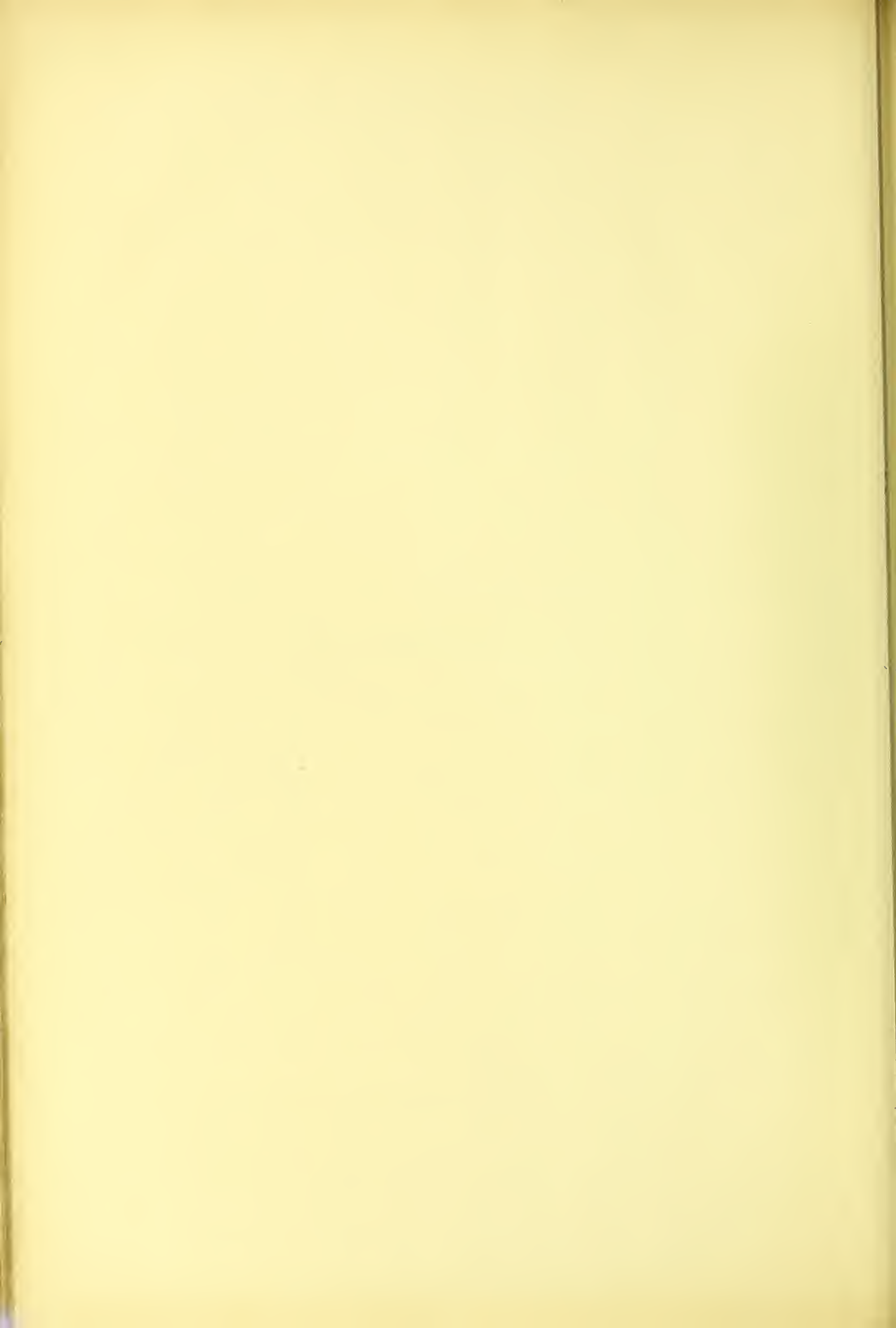






Register No. LXXV

Pulse . . . . .  
Respiration . . . . .





## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

Australian Gelding

*Australian Golding* \_\_\_\_\_ Date of \_\_\_\_\_  
Disease, \_\_\_\_\_

Age. \_\_\_\_\_ Sex, \_\_\_\_\_

— Colour,

Disease, \_\_\_\_\_ Date of \_\_\_\_\_ Result, \_\_\_\_\_ Death \_\_\_\_\_ Date of Result, 8-2-93 Register No. LXXV.

Disease, \_\_\_\_\_ Date of \_\_\_\_\_ Result, \_\_\_\_\_ Death \_\_\_\_\_ Date of Result, 8-2-93 Register No. LXXV.

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(S. 415)

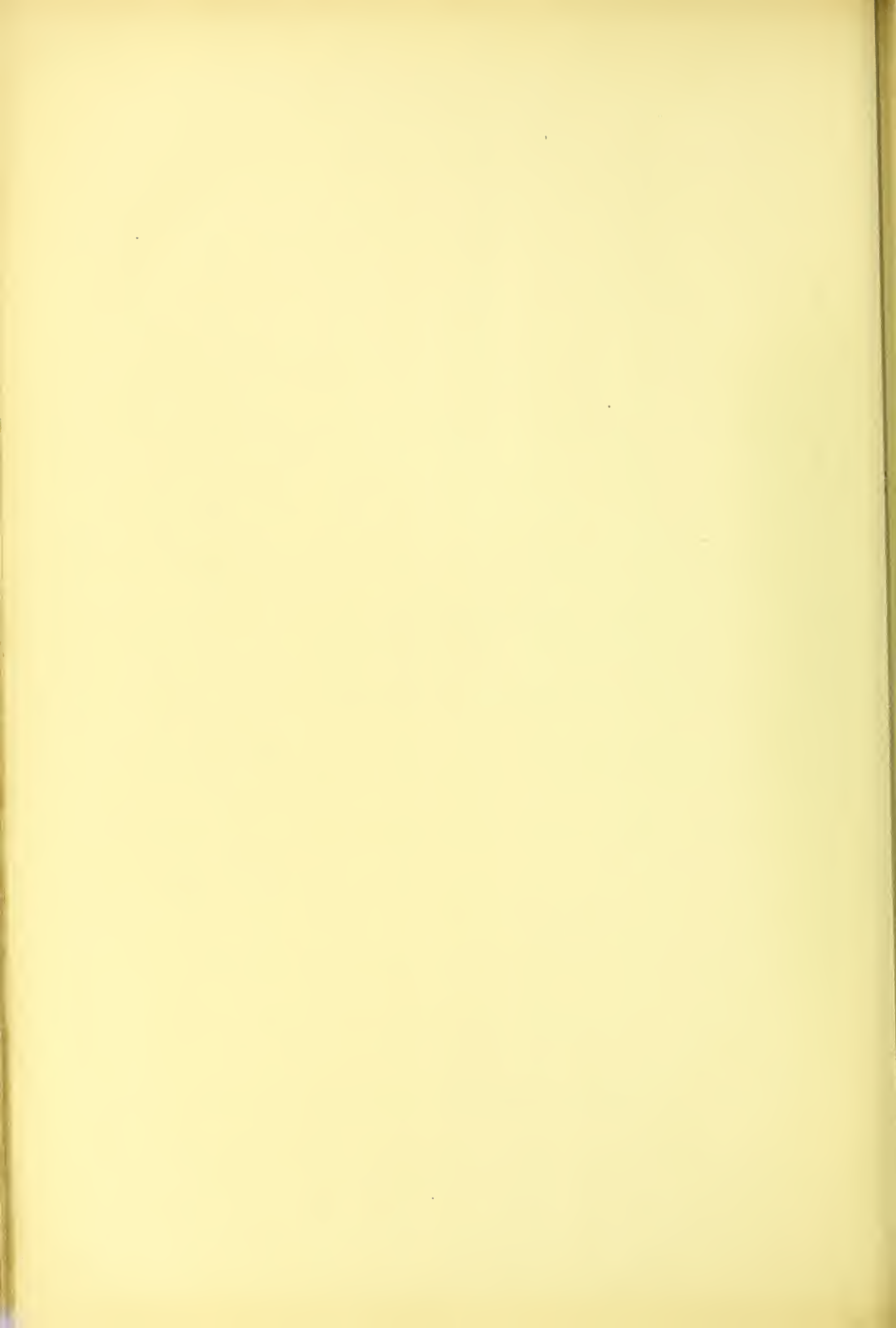
### Hemimazon Curve

### Temperature.....

Drawn & Litho: Govt. Photoduplication Office, Poona: 1994.

Pulse . . . . .

Respiration . . . . .



RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

Australian Gelding

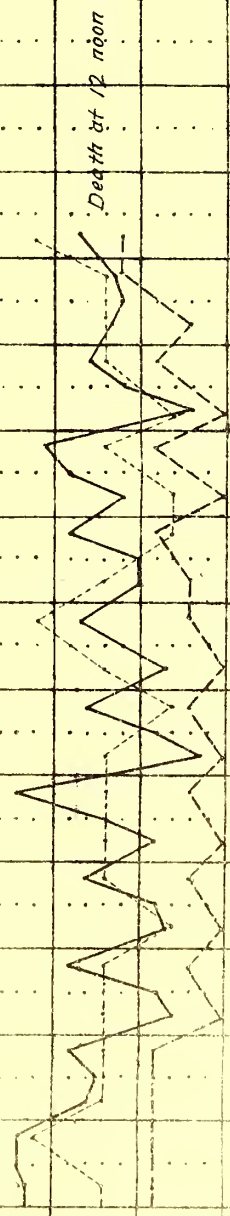
Disease, \_\_\_\_\_ Date of \_\_\_\_\_

Result, \_\_\_\_\_ Death \_\_\_\_\_

Age, \_\_\_\_\_ Sex, \_\_\_\_\_

Colour, \_\_\_\_\_ Register No. LXXV.

| Dates of Observation. |  | Jan 28      | 29 | 30   | 31 | Feb. 1 | 2 | 3    | 4 | 5    | 6 | 7    | 8 |      |  |      |  |      |  |      |  |      |  |      |  | Record of Organisms in Blood. |  |   |  |      |  |                   |  |      |  |              |  |      |  |        |  |      |  |        |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |
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| Days of Disease       |  |             |    |      |    |        |   |      |   |      |   |      |   |      |  |      |  |      |  |      |  |      |  |      |  |                               |  | Swimming over 50 in a field of microscope |  |      |  | Very numerous =50 |  |      |  | Numerous =20 |  |      |  | Few =5 |  |      |  | Absent |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |
| Organisms in Blood.   |  | Temperature |    | Time |    | Time   |   | Time |   | Time |   | Time |   | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time                          |  | Time                                      |  | Time |  | Time              |  | Time |  | Time         |  | Time |  | Time   |  | Time |  | Time   |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  | Time |  |



Death at 12 noon

(5.415)

Harmonization Curve  
Temperature

Drawn & Litho: Govt. Printing Office, Poona 1894.

Pulse.  
Respiration

Feb. 2. 93. Inoculated two Guinea Pigs with 0.5 c.c. Blood taken 4 hours P.M. Result, negative.





The *left ventricle* is contracted. The muscular tissue of the wall measures at its greatest width 1·8 inches and its cavity is almost empty. The internal surface presents numerous sub-endocardial extravasations, somewhat extensive in certain situations, especially involving the tissues lying behind the posterior segment of the mitral valve and the upper portions of the musculi-papillares, and there are smaller ones studded over the muscular surface of the cavity. The valves are healthy.

The *abdominal cavity* contains a few ounces of a turbid, orange fluid.

The *Liver* is small and dark in colour. It weighs 7 lbs 6½ ozs. The convex surface of both lobes shows signs of old perihepatitis. On section, the tissue is dark in colour, and dark fluid blood exudes from the cut ends of the vessels.

The *Spleen* is normal in size; the surfaces are studded with numerous brick-red sub-capsular petechiæ, which present an almost confluent appearance at the free borders. On section, the tissues present a dark purple-red colour. Follicles normal in size.

The *Kidneys*.—Right weighs 1 lb. 1 oz.; Left 1 lb. Capsules thin and easily separable; surfaces are smooth, and of a dark-red colour. The tissues on section are dark. The malpighian corpuscles are very prominent; but there is no other change.

The *Stomach* is large and somewhat distended. It contains a considerable amount of semi-digested grass. The *cuticular* portion presents a fairly healthy condition, the only change noticeable being a small area of a pale pink colour. The mucous membrane of the *villous* portion is thin and there is a strip of a pale-red colour, 1·5" in width, which extends along the line of demarcation. About midway between the cuticular border and the pyloric opening, there is an irregular shaped patch, measuring 3" × 2", the surface of which is covered with ragged mucous membrane, from which it has become detached, and nearer to the pylorus the surface of the organ is somewhat granulated. A few single *spiroptera* are scattered over the surface of the villous portion.

The *small Intestine* presents a few small patches, upon which the vessels are injected and present an arborescent appearance, the surrounding tissues for a short distance being blood-stained. There are also two or three small, dark, raised tumours, somewhat circular in form and ¼th of an inch in diameter, which on section of the mucous membrane covering them are found to be formed by small clots of blood lying on the middle coat of the intestine.

The *Large Intestine* contains pultaceous, greenish-brown, semi-fluid masses, as far as the *Colon*—in this portion, consistent, and formed dung. The *Cæcum* presents a patch 1" × 5", bright red in colour, caused by extravasated blood beneath the mucous membrane. No parasites were found in the intestines although carefully searched for.

The *bladder* contains a few ounces of a turbid, very viscid, orange coloured fluid, Sp. Gr. 1·036, acid in reaction. The internal surface of the organ presents a healthy appearance.

*Remarks*.—This experiment was undertaken in order to test the efficacy or otherwise of the excrement of the Rat (*Mus Decumanus*) as a means of producing "Surra" by gastric ingestion. For this purpose, numerous rats were obtained, the blood of each being submitted to careful microscopical examination, and those animals in which the hæmatozoon was found to be present were placed in an iron wire-cage by themselves. When a sufficient number of these latter was obtained, the cage was placed over a metal plate, and the excrement which fell through was collected in the morning and mixed with corn, and so given to the animal subjected to experiment, at 8 A.M. and 6 P.M.

Every week the blood of the caged rats was again submitted to microscopical examination, and those in which the hæmatozoon was found to be absent were discarded, and their places filled by fresh ones in which the organisms were found to be numerous.

The experiment was commenced on the morning of the 26th November 1892, and was continued until the evening of the 7th February 1893—a period of seventy-four days. Small doses (grammes iii) were given at first, but these were varied later according to the quantity of excrement obtainable. During the whole course of the case the temperature never exceeded 38·1° C. except on two occasions. One might be inclined to consider the negative result in this case as clear evidence of the innocuous properties of rat-dung, and its inability to produce Surra. But before doing so, there are three points which will have to be taken into consideration.

1. The fact that Surra is not enzootic in Poona or on the Deccan plateau, probably on account of the dryness of the situation; and it was recognised therefore before commencing the experiment that the result might prove negative.

2. It is a well ascertained fact, and the statistics in the Surra Report, Volume I, furnish the proof, that in Bombay the deaths from Surra as a rule commence in September, and new cases practically cease at the end of December. Consequently this experiment was undertaken at too late a period of the year, and any future experiment in this line should be commenced if it can be arranged in Bombay, or at all events below the ghâts, towards the end of the hot weather, and continued during the rains. The latent period in the case of experimental inoculation by gastric ingestion of small quantities of blood, known to contain the hæmatozoon (*vide* horse No. XX) occupied 130 days from the first, and 75 days from the final exhibition of the soiled blood, until the appearance of the hæmatozoon in the general circulation. Consequently, if we consider it probable that the cause of the outbreak at the Bombay Tramway Company's Stables was due to the horses consuming rat-excrement in their corn, and we take as an instance the outbreak of 1892, when three horses were attacked with Surra on the 12th and 14th of September; these animals must have commenced the ingestion of the grain soiled with the damp excrement, about July 1st, 1892, according to the shorter, or on the 6th May 1892, according to the longer computation. The grain we must suppose is contaminated during the whole year, but certain changes in the rat excrement take place at different seasons—the most important being *dryness* after the rains in October, November and December, which is still more accentuated during the hot weather but at the commencement of the rains the dung becomes soft, and remains so, thus allowing the lower forms of life present in it to be developed.

3. A third point which has been noticed in cases submitted to inoculation with rat's blood is, that the hæmatozoon of rats (kept for any time in captivity, and fed on clean corn) appears to lose in virulence. The positive cases which have been recorded in horses in this report were inoculated with blood taken from rats which had been caught only a few hours previous to their blood being used for the purpose of inoculation. Some species of rats are very clean feeders, but the *Mus Decumanus* of this country is not so, and eats any food which is procurable; where no grain is obtainable it having recourse to offal or faecal matter.



## HORSE No. XCI.

## POSITIVE RESULT.

Australian Gelding, aged, in very fine condition, was cast on account of lameness.

The question as to how rats could cause the disease in horses was raised; for the food would rarely, if ever, be soiled with the blood of these animals. It therefore only remained to be tried whether the excreta of rats, in whose blood the infusorian was present at the time of its collection, could cause the disease when mixed with grain. An experiment with this end in view had already been undertaken at Poona, on the Deccan plateau, where the disease is not enzootic, and where the difficulty of producing it was fully recognised, owing to the dryness of the situation at that period of the year (December to February). These experiments as expected proved negative.

Consequently it was deemed advisable to make further experiments with the same end in view in Bombay, where the climate is favourable from its humidity, and the disease is enzootic.

Two horses (Nos. LXXXIX and XCI) were therefore transported on May 6th, 1893, to Bombay and through the courtesy of Major J. Mills were located at the Veterinary College Hospital. A regular supply of rats was maintained, principally from the Bandora Kennels, and their blood was examined daily. The rats, in the blood of which the hæmatozoon was discovered, were placed in wire cages over a metal plate, so that the excrement would fall through into the receptacle and be forthcoming when required. Morning and evening the excrement was collected, weighed, and a known quantity mixed with the ration of corn previous to its being given to the animals under experiment.

The results of the experiment in the case of Horse No. LXXXIX proved negative.

| Month and Date. |    |     | Temperature °C. |      | Pulse. |      | Respiration. |      | Temperature in Shade °F. |          | Humidity. | Condition of Blood. | REMARKS. |
|-----------------|----|-----|-----------------|------|--------|------|--------------|------|--------------------------|----------|-----------|---------------------|----------|
|                 |    |     | A.M.            | P.M. | A.M.   | P.M. | A.M.         | P.M. | Maximum.                 | Minimum. |           |                     |          |
| 1893.           |    |     |                 |      |        |      |              |      |                          |          |           |                     |          |
| May             | 6  | ... | 38.1            | 37.8 | 37     | 38   | 20           | 19   | 88.9                     | 80.0     | 72        | Healthy.            |          |
| "               | 7  | ... | 38.0            | 37.5 | 36     | 40   | 17           | 20   | 89.9                     | 80.0     | 74        | "                   |          |
| "               | 8  | ... | 37.6            | 37.7 | 36     | 40   | 18           | 19   | 90.4                     | 81.0     | 74        | "                   |          |
| "               | 9  | ... | 37.6            | 37.6 | 38     | 36   | 20           | 20   | 90.4                     | 80.5     | 74        | "                   |          |
| "               | 10 | ... | 37.8            | 37.6 | 40     | 40   | 18           | 16   | 89.9                     | 80.5     | 72        | "                   |          |
| "               | 11 | ... | 37.7            | 37.6 | 40     | 36   | 18           | 20   | 90.4                     | 81.0     | 75        | "                   |          |
| "               | 12 | ... | 38.1            | 37.6 | 36     | 40   | 19           | 18   | 90.4                     | 80.0     | 70        | "                   |          |
| "               | 13 | ... | 38.0            | 37.8 | 36     | 40   | 20           | 20   | 89.4                     | 81.0     | 74        | "                   |          |
| "               | 14 | ... | 38.1            | 37.7 | 36     | 36   | 16           | 19   | 89.4                     | 79.0     | 75        | "                   |          |
| "               | 15 | ... | 37.8            | 37.7 | 36     | 36   | 19           | 19   | 89.4                     | 80.0     | 73        | "                   |          |
| "               | 16 | ... | 37.8            | 37.8 | 34     | 40   | 20           | 20   | 88.9                     | 80.0     | 75        | "                   |          |
| "               | 17 | ... | 38.1            | 37.8 | 36     | 38   | 18           | 18   | 89.9                     | 80.0     | 77        | "                   |          |
| "               | 18 | ... | 37.8            | 37.8 | 38     | 36   | 19           | 18   | 88.4                     | 79.5     | 69        | "                   |          |
| "               | 19 | ... | 38.1            | 37.7 | 42     | 40   | 17           | 19   | 89.9                     | 80.0     | 72        | "                   |          |
| "               | 20 | ... | 37.8            | 37.8 | 36     | 36   | 20           | 20   | 89.4                     | 80.0     | 69        | "                   |          |
| "               | 21 | ... | 37.8            | 38.0 | 36     | 44   | 18           | 20   | 89.4                     | 81.0     | 74        | "                   |          |
| "               | 22 | ... | 37.8            | 37.8 | 36     | 43   | 20           | 20   | 89.9                     | 81.0     | 72        | "                   |          |
| "               | 23 | ... | 38.0            | 38.0 | 36     | 38   | 20           | 21   | 89.9                     | 81.5     | 77        | "                   |          |
| "               | 24 | ... | 38.0            | 37.4 | 40     | 42   | 20           | 20   | 90.9                     | 81.5     | 70        | "                   |          |
| "               | 25 | ... | 38.0            | 37.6 | 36     | 36   | 18           | 18   | 90.9                     | 81.5     | 79        | "                   |          |
| "               | 26 | ... | 37.7            | 38.0 | 32     | 26   | 18           | 20   | 90.9                     | 82.0     | 76        | "                   |          |
| "               | 27 | ... | 37.7            | 38.3 | 36     | 36   | 18           | 20   | 91.4                     | 79.5     | 87        | "                   |          |
| "               | 28 | ... | 38.1            | 38.3 | 40     | 40   | 18           | 20   | 85.9                     | 75.5     | 93        | "                   |          |
| "               | 29 | ... | 38.1            | 38.0 | 33     | 37   | 21           | 21   | 82.4                     | 78.0     | 89        | "                   |          |
| "               | 30 | ... | 38.1            | 37.9 | 36     | 36   | 22           | 23   | 82.9                     | 80.5     | 81        | "                   |          |
| "               | 31 | ... | 38.0            | 37.8 | 40     | 44   | 19           | 18   | 87.9                     | 80.5     | 75        | "                   |          |
| June            | 1  | ... | 38.1            | 38.1 | 40     | 48   | 18           | 20   | 87.9                     | 80.0     | 79        | "                   |          |
| "               | 2  | ... | 38.0            | 38.1 | 40     | 40   | 20           | 19   | 88.4                     | 79.0     | 79        | "                   |          |
| "               | 3  | ... | 38.1            | 38.0 | 42     | 44   | 20           | 20   | 88.9                     | 80.0     | 77        | "                   |          |
| "               | 4  | ... | 38.1            | 37.8 | 44     | 42   | 19           | 20   | 88.9                     | 80.5     | 75        | "                   |          |
| "               | 5  | ... | 37.8            | 37.6 | 46     | 43   | 19           | 20   | 89.4                     | 81.5     | 79        | "                   |          |
| "               | 6  | ... | 38.1            | 38.1 | 40     | 40   | 20           | 20   | 90.4                     | 80.5     | 79        | "                   |          |
| "               | 7  | ... | 38.0            | 38.0 | 36     | 44   | 18           | 20   | 90.4                     | 78.5     | 83        | "                   |          |
| "               | 8  | ... | 38.0            | 38.0 | 50     | 44   | 18           | 18   | 88.4                     | 82.0     | 80        | "                   |          |
| "               | 9  | ... | 38.1            | 37.8 | 44     | 40   | 18           | 20   | 90.9                     | 76.0     | 89        | "                   |          |
| "               | 10 | ... | 38.1            | 37.8 | 40     | 40   | 21           | 20   | 86.4                     | 76.0     | 87        | "                   |          |
| "               | 11 | ... | 37.8            | 37.7 | 40     | 42   | 20           | 21   | 87.9                     | 80.0     | 83        | "                   |          |
| "               | 12 | ... | 38.0            | 37.8 | 36     | 43   | 20           | 20   | 85.4                     | 77.0     | 85        | "                   |          |
| "               | 13 | ... | 38.0            | 37.9 | 40     | 42   | 21           | 20   | 84.9                     | 77.0     | 87        | "                   |          |
| "               | 14 | ... | 38.0            | 37.8 | 36     | 40   | 20           | 20   | 86.4                     | 76.5     | 91        | "                   |          |
| "               | 15 | ... | 37.7            | 37.8 | 36     | 44   | 18           | 20   | 83.4                     | 76.0     | 91        | "                   |          |
| "               | 16 | ... | 37.7            | 37.9 | 32     | 44   | 18           | 20   | 81.4                     | 76.5     | 93        | "                   |          |
| "               | 17 | ... | 37.7            | 37.7 | 36     | 40   | 19           | 19   | 79.8                     | 78.0     | 89        | "                   |          |
| "               | 18 | ... | 37.8            | 37.7 | 36     | 40   | 20           | 19   | 81.9                     | 76.0     | 83        | "                   |          |
| "               | 19 | ... | 37.7            | 37.8 | 40     | 40   | 19           | 20   | 81.4                     | 75.0     | 95        | "                   |          |
| "               | 20 | ... | 37.8            | 37.8 | 36     | 40   | 20           | 19   | 80.9                     | 76.5     | 89        | "                   |          |
| "               | 21 | ... | 37.8            | 37.8 | 40     | 44   | 20           | 20   | 80.9                     | 76.5     | 91        | "                   |          |
| "               | 22 | ... | 37.8            | 37.8 | 44     | 44   | 20           | 20   | 80.9                     | 76.5     | 89        | "                   |          |
| "               | 23 | ... | 38.0            | 37.9 | 46     | 44   | 23           | 20   | 84.4                     | 78.5     | 85        | "                   |          |
| "               | 24 | ... | 37.9            | 37.8 | 36     | 40   | 20           | 20   | 83.9                     | 78.5     | 85        | "                   |          |



| Month and Date. |    |     | Temperature °C. |        | Pulse. |      | Respiration. |      | Temperature in Shade °F. |          | Humidity. | Condition of Blood. | REMARKS. |
|-----------------|----|-----|-----------------|--------|--------|------|--------------|------|--------------------------|----------|-----------|---------------------|----------|
|                 |    |     | A.M.            | 1 P.M. | A.M.   | P.M. | A.M.         | P.M. | Maximum.                 | Minimum. |           |                     |          |
| 1893.           |    |     |                 |        |        |      |              |      |                          |          |           |                     |          |
| June            | 25 | ... | 37.7            | 38.0   | 33     | 42   | 18           | 21   | 85.4                     | 79.0     | 87        | Healthy.            |          |
| "               | 26 | ... | 37.7            | 37.8   | 34     | 36   | 18           | 20   | 83.9                     | 80.0     | 85        | "                   |          |
| "               | 27 | ... | 37.7            | 37.6   | 30     | 36   | 18           | 18   | 84.4                     | 79.5     | 85        | "                   |          |
| "               | 28 | ... | 38.0            | 37.8   | 36     | 40   | 20           | 20   | 84.6                     | 80.0     | 83        | "                   |          |
| "               | 29 | ... | 38.0            | 37.8   | 36     | 40   | 19           | 20   | 85.4                     | 78.5     | 89        | "                   |          |
| "               | 30 | ... | 38.0            | 38.0   | 36     | 30   | 18           | 20   | 83.9                     | 77.5     | 87        | "                   |          |
| July            | 1  | ... | 37.9            | 38.0   | 34     | 32   | 18           | 20   | 83.4                     | 76.5     | 89        | "                   |          |
| "               | 2  | ... | 37.8            | 37.6   | 42     | 32   | 20           | 23   | 83.9                     | 74.5     | 91        | "                   |          |
| "               | 3  | ... | 37.6            | 37.6   | 42     | 40   | 20           | 20   | 82.4                     | 74.5     | 93        | "                   |          |
| "               | 4  | ... | 37.6            | 37.6   | 36     | 36   | 20           | 20   | 82.9                     | 76.0     | 88        | "                   |          |
| "               | 5  | ... | 37.7            | 37.5   | 42     | 36   | 19           | 20   | 83.9                     | 75.0     | 93        | "                   |          |
| "               | 6  | ... | 37.7            | 37.4   | 36     | 30   | 19           | 20   | 80.9                     | 76.5     | 85        | "                   |          |
| "               | 7  | ... | 37.7            | 37.5   | 36     | 32   | 19           | 20   | 80.9                     | 77.0     | 89        | "                   |          |
| "               | 8  | ... | 37.6            | 37.7   | 42     | 32   | 20           | 20   | 84.4                     | 78.0     | 85        | "                   |          |
| "               | 9  | ... | 37.8            | 37.7   | 36     | 32   | 20           | 24   | 84.9                     | 76.5     | 89        | "                   |          |
| "               | 10 | ... | 37.8            | 37.6   | 30     | 32   | 20           | 20   | 86.4                     | 78.0     | 83        | "                   |          |
| "               | 11 | ... | 37.5            | 37.7   | 30     | 30   | 22           | 24   | 86.4                     | 76.5     | 83        | "                   |          |
| "               | 12 | ... | 37.7            | 37.7   | 40     | 46   | 19           | 23   | 86.9                     | 78.5     | 80        | "                   |          |
| "               | 13 | ... | 37.7            | 37.5   | 34     | 40   | 23           | 20   | 85.9                     | 77.5     | 87        | "                   |          |
| "               | 14 | ... | 37.5            | 38.0   | 42     | 44   | 19           | 25   | 86.4                     | 78.5     | 83        | "                   |          |
| "               | 15 | ... | 37.4            | 37.7   | 36     | 36   | 19           | 21   | 85.9                     | 78.0     | 85        | "                   |          |
| "               | 16 | ... | 37.6            | 37.8   | 40     | 40   | 19           | 25   | 83.9                     | 79.0     | 87        | "                   |          |
| "               | 17 | ... | 37.6            | 37.6   | 36     | 42   | 20           | 20   | 84.9                     | 78.0     | 81        | "                   |          |
| "               | 18 | ... | 37.7            | 37.7   | 34     | 44   | 18           | 20   | 84.9                     | 79.0     | 83        | "                   |          |
| "               | 19 | ... | 37.8            | 37.7   | 34     | 36   | 22           | 24   | 84.4                     | 77.0     | 83        | "                   |          |
| "               | 20 | ... | 37.8            | 37.8   | 36     | 36   | 24           | 23   | 85.4                     | 75.0     | 93        | "                   |          |
| "               | 21 | ... | 37.8            | 37.6   | 36     | 32   | 19           | 20   | 80.9                     | 77.5     | 91        | "                   |          |
| "               | 22 | ... | 37.9            | 37.7   | 36     | 32   | 25           | 20   | 84.9                     | 78.0     | 91        | "                   |          |
| "               | 23 | ... | 37.8            | 37.8   | 36     | 40   | 17           | 18   | 83.9                     | 78.0     | 91        | "                   |          |
| "               | 24 | ... | 38.0            | 37.8   | 36     | 36   | 20           | 18   | 85.4                     | 78.5     | 81        | "                   |          |
| "               | 25 | ... | 37.8            | 37.7   | 40     | 28   | 20           | 21   | 86.4                     | 78.0     | 81        | "                   |          |
| "               | 26 | ... | 37.7            | ...    | 32     | ...  | 23           | ...  | 85.9                     | 77.0     | 82        | "                   |          |
| "               | 27 | ... | 37.7            | ...    | 32     | ...  | 22           | ...  | 84.9                     | 76.0     | 91        | "                   |          |
| "               | 28 | ... | 37.7            | ...    | 32     | ...  | 24           | ...  | 81.4                     | 76.5     | 82        | "                   |          |
| "               | 29 | ... | 38.0            | ...    | 40     | ...  | 20           | ...  | 86.0                     | 75.0     | 85        | "                   |          |
| "               | 30 | ... | 37.7            | ...    | 42     | ...  | 18           | ...  | 82.0                     | 77.0     | 85        | "                   |          |
| "               | 31 | ... | 37.7            | ...    | 36     | ...  | 18           | ...  | 83.0                     | 78.0     | 83        | "                   |          |
| August          | 1  | ... | 37.8            | ...    | 36     | ...  | 20           | ...  | 86.0                     | 79.0     | 82        | "                   |          |
| "               | 2  | ... | 37.7            | ...    | 32     | ...  | 19           | ...  | 86.0                     | 76.0     | 83        | "                   |          |
| "               | 3  | ... | 37.8            | ...    | 30     | ...  | 20           | ...  | 82.0                     | 75.5     | 91        | "                   |          |
| "               | 4  | ... | 37.7            | ...    | 34     | ...  | 18           | ...  | 82.5                     | 76.5     | 87        | "                   |          |
| "               | 5  | ... | 37.7            | ...    | 34     | ...  | 18           | ...  | 84.0                     | 77.5     | 89        | "                   |          |
| "               | 6  | ... | 37.7            | ...    | 36     | ...  | 18           | ...  | 84.5                     | 75.0     | 91        | "                   |          |
| "               | 7  | ... | 37.5            | ...    | 36     | ...  | 20           | ...  | 81.5                     | 75.0     | 95        | "                   |          |
| "               | 8  | ... | 37.6            | ...    | 46     | ...  | 20           | ...  | 80.5                     | 77.0     | 91        | "                   |          |
| "               | 9  | ... | 37.6            | ...    | 36     | ...  | 18           | ...  | 83.0                     | 77.5     | 87        | "                   |          |
| "               | 10 | ... | 37.8            | ...    | 36     | ...  | 22           | ...  | 84.5                     | 76.5     | 91        | "                   |          |
| "               | 11 | ... | 37.7            | ...    | 42     | ...  | 19           | ...  | 83.0                     | 77.0     | 89        | "                   |          |
| "               | 12 | ... | 37.6            | ...    | 40     | ...  | 20           | ...  | 85.0                     | 76.0     | 85        | "                   |          |
| "               | 13 | ... | 37.7            | ...    | 38     | ...  | 19           | ...  | 85.0                     | 77.5     | 80        | "                   |          |
| "               | 14 | ... | 37.7            | ...    | 40     | ...  | 19           | ...  | 86.0                     | 77.0     | 83        | "                   |          |
| "               | 15 | ... | 37.5            | ...    | 38     | ...  | 20           | ...  | 83.5                     | 75.0     | 93        | "                   |          |
| "               | 16 | ... | 37.7            | ...    | 36     | ...  | 18           | ...  | 80.0                     | 75.0     | 87        | "                   |          |
| "               | 17 | ... | 37.7            | ...    | 34     | ...  | 19           | ...  | 85.0                     | 76.0     | 91        | "                   |          |
| "               | 18 | ... | 37.6            | ...    | 40     | ...  | 18           | ...  | 86.0                     | 77.5     | 89        | "                   |          |
| "               | 19 | ... | 37.7            | ...    | 36     | ...  | 19           | ...  | 86.0                     | 79.0     | 80        | "                   |          |
| "               | 20 | ... | 37.7            | ...    | 42     | ...  | 19           | ...  | 84.5                     | 79.0     | 81        | "                   |          |
| "               | 21 | ... | 37.5            | ...    | 38     | ...  | 15           | ...  | 85.0                     | 78.5     | 80        | "                   |          |
| "               | 22 | ... | 37.6            | ...    | 36     | ...  | 17           | ...  | 84.0                     | 76.5     | 80        | "                   |          |
| "               | 23 | ... | 37.8            | ...    | 36     | ...  | 17           | ...  | 85.5                     | 77.5     | 80        | "                   |          |
| "               | 24 | ... | 37.8            | ...    | 36     | ...  | 20           | ...  | 86.0                     | 77.5     | 85        | "                   |          |
| "               | 25 | ... | 37.7            | ...    | 42     | ...  | 18           | ...  | 85.5                     | 78.5     | 83        | "                   |          |
| "               | 26 | ... | 37.8            | ...    | 42     | ...  | 20           | ...  | 86.0                     | 78.0     | 78        | "                   |          |
| "               | 27 | ... | 37.7            | ...    | 36     | ...  | 17           | ...  | 83.5                     | 76.5     | 89        | "                   |          |
| "               | 28 | ... | 37.8            | ...    | 42     | ...  | 20           | ...  | 82.0                     | 75.0     | 87        | "                   |          |
| "               | 29 | ... | 37.7            | ...    | 38     | ...  | 16           | ...  | 84.0                     | 76.5     | 85        | "                   |          |
| "               | 30 | ... | 37.7            | ...    | 40     | ...  | 17           | ...  | 84.5                     | 76.5     | 83        | "                   |          |
| "               | 31 | ... | 37.8            | ...    | 36     | ...  | 15           | ...  | 85.5                     | 77.0     | 83        | "                   |          |
| Sept.           | 1  | ... | 37.7            | ...    | 40     | ...  | 14           | ...  | 83.0                     | 77.0     | 85        | "                   |          |
| "               | 2  | ... | 37.8            | ...    | 36     | ...  | 15           | ...  | 83.5                     | 76.5     | 83        | "                   |          |
| "               | 3  | ... | 37.7            | ...    | 36     | ...  | 15           | ...  | 85.5                     | 77.5     | 83        | "                   |          |
| "               | 4  | ... | 38.0            | ...    | 40     | ...  | 14           | ...  | 86.0                     | 76.5     | 89        | "                   |          |

| Month and Date. | Temperature °C. |        | Pulse. |      | Respiration. |      | Temperature in Shade °F. |          | Humidity. | Condition of Blood. | REMARKS. |
|-----------------|-----------------|--------|--------|------|--------------|------|--------------------------|----------|-----------|---------------------|----------|
|                 | A.M.            | 1 P.M. | A.M.   | P.M. | A.M.         | P.M. | Maximum.                 | Minimum. |           |                     |          |
| 1893.           |                 |        |        |      |              |      |                          |          |           |                     |          |
| September 5     | ...             | 37.7   | ...    | 36   | ...          | 16   | ...                      | 85.5     | 75.0      | 91                  | Healthy. |
| " 6             | ...             | 37.7   | ...    | 36   | ...          | 15   | ...                      | 83.0     | 78.0      | 87                  | "        |
| " 7             | ...             | 37.7   | ...    | 36   | ...          | 16   | ...                      | 81.0     | 74.5      | 91                  | "        |
| " 8             | ...             | 37.8   | ...    | 34   | ...          | 16   | ...                      | 84.5     | 77.5      | 85                  | "        |
| " 9             | ...             | 37.7   | ...    | 36   | ...          | 16   | ...                      | 83.5     | 77.0      | 80                  | "        |
| " 10            | ...             | 37.6   | ...    | 34   | ...          | 15   | ...                      | 84.5     | 77.5      | 78                  | "        |
| " 11            | ...             | 37.8   | ...    | 34   | ...          | 16   | ...                      | 86.3     | 76.5      | 80                  | "        |
| " 12            | ...             | 37.8   | ...    | 36   | ...          | 15   | ...                      | 86.5     | 78.5      | 81                  | "        |
| " 13            | ...             | 37.8   | ...    | 36   | ...          | 16   | ...                      | 85.5     | 77.5      | 83                  | "        |
| " 14            | ...             | 37.7   | ...    | 36   | ...          | 15   | ...                      | 84.0     | 76.0      | 87                  | "        |
| " 15            | ...             | 37.8   | ...    | 31   | ...          | 15   | ...                      | 85.5     | 76.0      | 87                  | "        |
| " 16            | ...             | 37.8   | ...    | 34   | ...          | 16   | ...                      | 84.0     | 75.5      | 84                  | "        |
| " 17            | ...             | 37.8   | ...    | 36   | ...          | 16   | ...                      | 83.5     | 75.0      | 87                  | "        |
| " 18            | ...             | 37.7   | ...    | 36   | ...          | 17   | ...                      | 84.5     | 74.0      | 84                  | "        |
| " 19            | ...             | 37.6   | ...    | 34   | ...          | 16   | ...                      | 83.5     | 77.0      | 91                  | "        |
| " 20            | ...             | 37.8   | ...    | 36   | ...          | 15   | ...                      | 84.5     | 76.0      | 82                  | "        |
| " 21            | ...             | 37.5   | ...    | 36   | ...          | 17   | ...                      | 85.0     | 75.5      | 89                  | "        |
| " 22            | ...             | 37.6   | ...    | 38   | ...          | 17   | ...                      | 84.5     | 74.0      | 88                  | "        |
| " 23            | ...             | 37.6   | ...    | 40   | ...          | 16   | ...                      | 82.5     | 75.5      | 89                  | "        |
| " 24            | ...             | 37.6   | ...    | 38   | ...          | 17   | ...                      | 85.0     | 74.5      | 93                  | "        |
| " 25            | ...             | 37.7   | ...    | 38   | ...          | 17   | ...                      | 84.0     | 74.5      | 93                  | "        |
| " 26            | ...             | 37.8   | ...    | 40   | ...          | 17   | ...                      | 84.5     | 76.0      | 91                  | "        |

| Date.        | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in the Blood. | REMARKS.   |
|--------------|-----------------|--------|--------|--------|------|--------------|------|-----------------|-------------------------|--|
|              | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                         |  |
| 1893.        |                 |        |        |        |      |              |      |                 |                         |  |
| September 27 | 37.6            | 37.9   | 38.2   | 36     | 36   | 32           | 16   | 1               | Absent                  | 27th.—Animal arrived from Bombay in good condition, and apparently in perfect health.  |
| " 28         | 38.8            | 40.2   | 40.3   | 44     | 44   | 20           | 32   | 2               | Very numerous.          | 28th.—An urticarial eruption is present over the whole body, but specially involving the abdomen and thighs. There is also a small swelling over the ensiform cartilage. Right conjunctival membrane tinged yellow and slightly petechiated. 5 P.M. eruption beneath the abdomen is now more marked. |
| " 29         | 39.8            | 40.1   | 38.4   | 48     | 44   | 16           | 36   | 3               | Numerous.               | 29th.—Animal dull, eruption decreased on the thighs, but increased under the abdomen. 5 P.M. eruption again more marked.   |
| " 30         | 37.7            | 38.1   | 37.8   | 36     | 32   | 24           | 24   | 4               | " ...                   | 30th.—Eruption almost disappeared, except from the shoulders. Conjunctivæ petechiated and visible mucous membranes congested. Appetite normal.   |
| October 1    | 38.0            | 39.0   | 38.6   | 32     | 36   | 12           | 32   | 5               | Very numerous.          | 1st.—Eruption still observable beneath the chest and abdomen.  |
| " 2          | 39.1            | 40.3   | 39.1   | 44     | 44   | 20           | 24   | 6               | Few ...                 | 2nd.—No apparent change in condition, but both conjunctival membranes tinged yellow.   |
| " 3          | 38.1            | 38.4   | 38.2   | 36     | 48   | 16           | 12   | 7               | Absent                  |  |
| " 4          | 37.3            | 37.5   | 37.5   | 32     | 36   | 20           | 24   | 8               | " ...                   | 4th.—Faint trace of eruption still present on the thighs.  |
| " 5          | 37.7            | 37.8   | 37.7   | 36     | 40   | 24           | 28   | 9               | " ...                   |  |
| " 6          | 37.7            | 37.3   | 37.7   | 40     | 36   | 32           | 26   | 10              | " ...                   | 6th.—The eruption has entirely disappeared, and the animal is slightly falling off in condition.   |
| " 7          | 37.4            | 37.4   | 37.3   | 36     | 36   | 16           | 24   | 11              | "                       |  |
| " 8          | 37.2            | 37.3   | 37.0   | 32     | 36   | 20           | 20   | 12              | "                       |  |
| " 9          | 36.8            | 37.8   | 37.8   | 32     | 32   | 16           | 16   | 13              | " ...                   | 9th.—Conjunctivæ and visible mucous membranes clear.   |
| " 10         | 37.1            | 37.4   | 37.6   | 36     | 36   | 28           | 40   | 14              | "                       |  |
| " 11         | 37.4            | 37.7   | 37.6   | 44     | 36   | 24           | 16   | 15              | "                       |  |



| Date.         | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in the Blood. | REMARKS.   |
|---------------|-----------------|--------|--------|--------|------|--------------|------|-----------------|-------------------------|--|
|               | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                         |  |
| 1893.         |                 |        |        |        |      |              |      |                 |                         |  |
| October 12... | 37.3            | 37.4   | 37.7   | 40     | 36   | 20           | 23   | 16              | Absent                  |  |
| " 13...       | 37.2            | 37.4   | 37.2   | 36     | 32   | 28           | 20   | 17              | "                       | 13th.—A slight colourless discharge from the nostrils, mucous membranes somewhat congested.  |
| " 14...       | 37.2            | 37.5   | 37.2   | 32     | 32   | 20           | 16   | 18              | "                       | 14th.—Discharge continues.   |
| " 15...       | 37.6            | 37.2   | 37.4   | 32     | 32   | 20           | 32   | 19              | "                       | 15th.—Discharge ceased.  |
| " 16...       | 37.5            | 37.5   | 37.7   | 28     | 32   | 20           | 24   | 20              | "                       | 16th.—Animal looks bright.   |
| " 17...       | 37.4            | 36.7   | 37.6   | 28     | 32   | 20           | 24   | 21              | "                       | 17th.—Swelling beneath abdomen somewhat increased in size.   |
| " 18...       | 36.6            | 37.4   | 37.5   | 32     | 36   | 16           | 16   | 22              | "                       |  |
| " 19...       | 35.7            | 37.0   | 37.7   | 28     | 32   | 12           | 16   | 23              | "                       |  |
| " 20...       | 37.1            | 37.0   | 37.7   | 28     | 28   | 16           | 16   | 24              | "                       | 20th.—The animal has lost flesh slightly during the past three days.   |
| " 21...       | 36.8            | 36.8   | 37.2   | 28     | 28   | 12           | 16   | 25              | "                       |  |
| " 22...       | 37.0            | 37.3   | 37.6   | 32     | 36   | 36           | 20   | 26              | "                       |  |
| " 23...       | 36.4            | 37.0   | 37.1   | 36     | 28   | 12           | 20   | 27              | "                       |  |
| " 24...       | 36.4            | 37.4   | 37.4   | 24     | 32   | 20           | 20   | 28              | "                       |  |
| " 25...       | 36.6            | 37.6   | 37.2   | 28     | 32   | 16           | 12   | 29              | "                       | 25th.—Claret coloured petechiæ invade both conjunctivæ.  |
| " 26...       | 36.8            | 37.3   | 37.9   | 28     | 28   | 16           | 16   | 30              | "                       | 26th.—Conjunctivæ clean.   |
| " 27...       | 37.4            | 37.8   | 37.6   | 32     | 32   | 20           | 28   | 31              | "                       |  |
| " 28...       | 37.2            | 37.6   | 37.7   | 28     | 36   | 8            | 20   | 32              | "                       |  |
| " 29...       | 37.4            | 37.5   | 37.6   | 35     | 36   | 16           | 20   | 33              | "                       |  |
| " 30...       | 37.4            | 38.2   | 38.6   | 32     | 36   | 16           | 24   | 34              | Few.                    |  |
| " 31...       | 38.4            | 40.2   | 40.0   | 36     | 48   | 16           | 40   | 35              | Numerous                | 31st.—Conjunctivæ yellow and petechiated. An eruption has appeared on the thighs.  |
| November 1... | 38.6            | 40.3   | 40.0   | 40     | 40   | 12           | 32   | 36              | "                       | 1st.—Animal dull, eruption still present on the thighs and shoulders.  |
| " 2...        | 36.4            | 37.0   | 37.2   | 32     | 44   | 12           | 20   | 37              | Few                     | 2nd.—Eruption continues.   |
| " 3...        | 36.6            | 37.0   | 37.6   | 36     | 36   | 12           | 24   | 38              | Absent                  | 3rd.—Animal rapidly losing condition; eruption spreading over the whole body.  |
| " 4...        | 36.8            | 37.2   | 37.4   | 32     | 40   | 20           | 20   | 39              | "                       | 4th.—Eruption disappeared to a great extent.   |
| " 5...        | 36.4            | 36.3   | 37.2   | 32     | 32   | 12           | 16   | 40              | "                       | 5th.—Eruption entirely disappeared.  |
| " 6...        | 36.4            | 36.5   | 37.2   | 28     | 28   | 12           | 12   | 41              | "                       | 6th.—Slight eruption has re-appeared on the thighs and fore-limbs.   |
| " 7...        | 36.7            | 37.3   | 37.4   | 32     | 28   | 12           | 16   | 42              | "                       |  |
| " 8...        | 36.8            | 37.1   | 37.6   | 32     | 40   | 12           | 16   | 43              | "                       |  |
| " 9...        | 37.2            | 37.2   | 37.6   | 28     | 32   | 24           | 20   | 44              | "                       | 9th.—Eruption still present to a slight extent.  |
| " 10...       | 36.5            | 36.6   | 37.1   | 28     | 32   | 12           | 16   | 45              | "                       | 10th.—Eruption has disappeared.  |
| " 11...       | 36.3            | 36.8   | 37.6   | 28     | 28   | 12           | 20   | 46              | "                       |  |
| " 12...       | 36.7            | 37.5   | 37.4   | 32     | 32   | 20           | 16   | 47              | "                       | 12th.—A bulky sediment of pus in the urine.  |
| " 13...       | 36.8            | 37.4   | 37.6   | 32     | 32   | 12           | 20   | 48              | "                       | 13th.—Do. do.  |
| " 14...       | 36.8            | 36.8   | 37.6   | 24     | 28   | 12           | 16   | 49              | "                       | 14th.—Do. do.  |
| " 15...       | 36.6            | 37.4   | 37.2   | 24     | 28   | 8            | 12   | 50              | "                       | 15th.—Marked falling off in condition.   |
| " 16...       | 36.8            | 37.2   | 37.0   | 32     | 32   | 12           | 16   | 51              | "                       | 16th.—There are several small hard swellings on the neck, shoulders and thighs, involving the skin only which formed a head, and later a small quantity of pus exuded. |
| " 17...       | 36.8            | 36.7   | 37.0   | 32     | 28   | 12           | 16   | 52              | "                       | 17th.—Animal continues to lose flesh.  |
| " 18...       | 36.8            | 37.4   | 37.3   | 32     | 32   | 12           | 12   | 53              | "                       | 18th.—The small swellings continue.  |
| " 19...       | 37.2            | 37.2   | 37.6   | 28     | 28   | 12           | 12   | 54              | "                       | 19th.—The small abscesses have burst and new ones have appeared.   |
| " 20...       | 36.7            | 37.2   | 37.3   | 28     | 24   | 8            | 16   | 55              | "                       |  |
| " 21...       | 36.7            | 37.2   | 37.2   | 24     | 24   | 8            | 12   | 56              | "                       |  |
| " 22...       | 36.5            | 37.0   | 37.8   | 24     | 28   | 8            | 12   | 57              | "                       |  |
| " 23...       | 37.1            | 37.4   | 37.0   | 24     | 36   | 8            | 16   | 58              | "                       |  |
| " 24...       | 36.6            | 37.1   | 37.1   | 28     | 36   | 12           | 16   | 59              | "                       |  |
| " 25...       | 36.4            | 37.2   | 37.2   | 24     | 24   | 16           | 12   | 60              | "                       |  |
| " 26...       | 36.4            | 36.2   | 37.7   | 28     | 24   | 8            | 12   | 61              | "                       |  |
| " 27...       | 37.0            | 36.9   | 37.4   | 24     | 24   | 12           | 16   | 62              | "                       |  |
| " 28...       | 36.8            | 36.8   | 37.1   | 26     | 24   | 16           | 30   | 63              | "                       | 28th.—A few small abscesses on the body and legs.  |
| " 29...       | 36.8            | 37.2   | 37.6   | 24     | 24   | 12           | 34   | 64              | "                       | 29th.—Irritation of the eyes, probably due to the physiological effect of the arsenic.   |
| " 30...       | 37.2            | 37.1   | 37.8   | 24     | 30   | 34           | 24   | 65              | "                       |  |



| Date.         | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in the Blood. | REMARKS.   |
|---------------|-----------------|--------|--------|--------|------|--------------|------|-----------------|-------------------------|--|
|               | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                         |  |
| 1893.         |                 |        |        |        |      |              |      |                 |                         |  |
| December 1... | 37.1            | 37.4   | 38.1   | 20     | 21   | 12           | 36   | 66              | Absent                  | 1st.—Condition of the eyes the same.   |
| „ 2...        | 36.9            | 37.1   | 37.1   | 24     | 21   | 10           | 20   | 67              | „                       |  |
| „ 3...        | 36.9            | 36.3   | 37.0   | 20     | 36   | 9            | 28   | 68              | „                       |  |
| „ 4...        | 38.5            | 37.3   | 37.8   | 48     | 28   | 15           | 16   | 69              | „                       |  |
| „ 5...        | 36.7            | 37.8   | 38.0   | 28     | 25   | 15           | 18   | 70              | „                       |  |
| „ 6...        | 36.7            | 37.2   | 37.0   | 38     | 21   | 12           | 12   | 71              | „ ...                   | 6th.—Small abscess formed between the thighs.  |
| „ 7...        | 36.6            | 37.6   | 37.8   | 26     | 23   | 12           | 15   | 72              | „ ...                   | 7th.—The small abscess has burst, and a small quantity of pus exuded.  |
| „ 8...        | 36.4            | 37.3   | 37.4   | 24     | 17   | 9            | 15   | 73              | „                       |  |
| „ 9           | 36.4            | 37.4   | 37.2   | 22     | 20   | 12           | 15   | 74              | „                       |  |
| „ 10...       | 36.6            | 36.4   | 37.6   | 24     | 20   | 12           | 12   | 75              | „ ...                   | 10th.—The conjunctival capillaries are congested ; petechiæ absent.  |
| „ 11...       | 36.4            | 36.5   | 37.0   | 26     | 25   | 13           | 15   | 76              | „                       |  |
| „ 12...       | 36.8            | 36.8   | 37.8   | 25     | 25   | 15           | 15   | 77              | „                       |  |
| „ 13...       | 36.6            | 37.1   | 37.2   | 24     | 30   | 18           | 20   | 78              | „                       |  |
| „ 14...       | 37.4            | 37.6   | 37.2   | 24     | 28   | 14           | 19   | 79              | „                       |  |
| „ 15...       | 36.3            | 37.3   | 37.4   | 24     | 27   | 12           | 17   | 80              | „                       |  |
| „ 16...       | 36.2            | 36.8   | 37.3   | 24     | 30   | 14           | 18   | 81              | „ ...                   | 16.—Animal continues to lose flesh slowly.   |
| „ 17...       | 36.1            | 36.9   | 36.9   | 26     | 28   | 18           | 13   | 82              | „                       |  |
| „ 18...       | 36.2            | 37.1   | 37.4   | 30     | 30   | 15           | 16   | 83              | „ ..                    | 18th.—An eruption of urticaria has appeared on the chest, fore limbs and thighs.   |
| „ 19...       | 37.2            | 37.3   | 37.3   | 28     | 30   | 15           | 14   | 84              | „ ...                   | 19th.—The eruption has increased on the thighs.  |
| „ 20...       | 37.6            | 37.1   | 37.7   | 28     | 25   | 16           | 18   | 85              | „ ...                   | 20th.—The eruption has entirely disappeared.   |
| „ 21...       | 37.2            | 37.3   | 37.8   | 22     | 25   | 16           | 10   | 86              | „                       |  |
| „ 22...       | 37.0            | 37.0   | 37.9   | 28     | 30   | 12           | 14   | 87              | „                       |  |
| „ 23...       | 36.8            | 37.2   | 37.8   | 26     | 27   | 14           | 17   | 88              | „ ...                   | 23rd.—Conjunctivæ slightly congested ; there is one small extravasation present in that of the right eye.                                |
| „ 24...       | 36.6            | 36.7   | 38.4   | 30     | 32   | 16           | 16   | 89              | „                       |  |
| „ 25...       | 37.2            | 38.0   | 38.0   | 32     | 34   | 16           | 16   | 90              | „                       |  |
| „ 26...       | 37.0            | 38.0   | 38.8   | 30     | 28   | 10           | 12   | 91              | „                       |  |
| „ 27...       | 37.2            | 38.3   | 39.0   | 26     | 28   | 12           | 17   | 92              | „                       |  |
| „ 28...       | 38.1            | 39.0   | 39.2   | 28     | 26   | 16           | 18   | 93              | „                       |  |
| „ 29...       | 38.1            | 38.4   | 39.4   | 26     | 28   | 20           | 17   | 94              | „                       |  |
| „ 30...       | 38.0            | 38.6   | 39.7   | 24     | 30   | 12           | 16   | 95              | „ ...                   | 30th.—Appetite continues good, but mastication is slow.  |
| „ 31...       | 38.2            | 39.8   | 40.0   | 26     | 30   | 20           | 24   | 96              | „ ...                   | 31st.—Symptoms of arsenical poisoning supervened, consequently the treatment was discontinued for a time.                                |
| 1894.         |                 |        |        |        |      |              |      |                 |                         |  |
| January 1...  | 39.5            | 39.2   | 38.8   | 28     | 36   | 8            | 12   | 97              |                         |  |
| „ 2...        | 39.4            | 39.3   | 38.6   | 36     | 38   | 12           | 12   | 98              | „ ...                   | 2nd.—The symptoms considered due to the medicine have subsided.  |
| „ 3...        | 38.1            | 38.6   | 39.0   | 32     | 32   | 12           | 12   | 99              | „ ...                   | 3rd.—An urticarial eruption appeared on the right shoulder and leg.  |
| „ 4...        | 38.5            | 38.9   | 39.4   | 28     | 36   | 8            | 12   | 100             | „ ...                   | 4th.—The animal is rapidly losing flesh. The eruption has somewhat faded ; the conjunctivæ a pale yellow and petechiated.                |
| „ 5...        | 39.4            | 39.6   | 39.7   | 36     | 36   | 12           | 12   | 101             | Few ...                 | 5th.—The eruption has entirely disappeared.  |
| „ 6...        | 39.4            | 39.5   | 39.6   | 32     | 36   | 12           | 24   | 102             | „                       |  |
| „ 7...        | 38.1            | 39.6   | 39.4   | 36     | 40   | 12           | 24   | 103             | Absent                  | 7th.—Irritability of skin present.   |
| „ 8...        | 38.3            | 38.6   | 39.0   | 28     | 36   | 12           | 1    | 104             | „                       |  |
| „ 9...        | 38.1            | 38.4   | 39.0   | 32     | 40   | 12           | 12   | 105             | „                       |  |
| „ 10...       | 38.1            | 38.2   | 39.1   | 32     | 36   | 8            | 12   | 106             | „                       |  |
| „ 11...       | 38.5            | 39.0   | 38.8   | 32     | 40   | 12           | 12   | 107             | Few ...                 | 11th.—The symptoms of the 4th and 7th are still present.   |
| „ 12...       | 38.1            | 38.5   | 38.3   | 28     | 36   | 8            | 12   | 108             | „                       |  |
| „ 13...       | 38.5            | 38.6   | 38.5   | 40     | 36   | 16           | 16   | 109             | „                       |  |
| „ 14...       | 38.2            | 38.8   | 39.2   | 48     | 44   | 16           | 15   | 110             | „                       |  |
| „ 15...       | 37.8            | 38.6   | 38.7   | 36     | 52   | 16           | 12   | 111             | „ ...                   | 15th.— The animal appears very weak and the appetite is falling off.   |
| „ 16...       | 38.0            | 39.0   | ...    | 52     | ...  | 16           | ...  | 112             | „ ...                   | 16th.—The animal is unable to stand, but still continues to eat lucerne grass. Chloroform was administered, and death occurred at 3 P.M. |

*Australian* \_\_\_\_\_ Age *10* \_\_\_\_\_ Sex *Female* \_\_\_\_\_ Colour *Brown* \_\_\_\_\_  
*Disease, Sunra (Fed upon rats' dung)* \_\_\_\_\_ Date of Attack *28-9-93* \_\_\_\_\_ Result *Death* \_\_\_\_\_ Date of Result *16-1-94* \_\_\_\_\_ Register No *XCI* \_\_\_\_\_ Word \_\_\_\_\_

Sex Gelding.

*Date of Attack* 28-9-93-

*Result Death.*

Date of Result 16-1-94-

Register No XC1-

Word

(5.415)

一、  
 二、  
 三、  
 四、  
 五、  
 六、  
 七、  
 八、  
 九、  
 十、

Time passed during  
24 hours

...

28<sup>th</sup> Sept.  
5<sup>th</sup> Oct.

One Guinea Pig  
Two " "

as inod with 0.4  
ch " " 0.3

of blood latent P  
" "

Drawn  
5 days  
10 "

006974402021900

*see, Poona 1954*









Australian \_\_\_\_\_ Age 10 \_\_\_\_\_ Sex Gelding \_\_\_\_\_ Colour Brown \_\_\_\_\_  
 Disease "Surra" (fed upon rot's dung) \_\_\_\_\_ Date of Attack 28-9-93 \_\_\_\_\_ Result Death \_\_\_\_\_ Date of Result 15-1-94 \_\_\_\_\_ Register No. X C1 \_\_\_\_\_ Ward \_\_\_\_\_

Colour Brown.

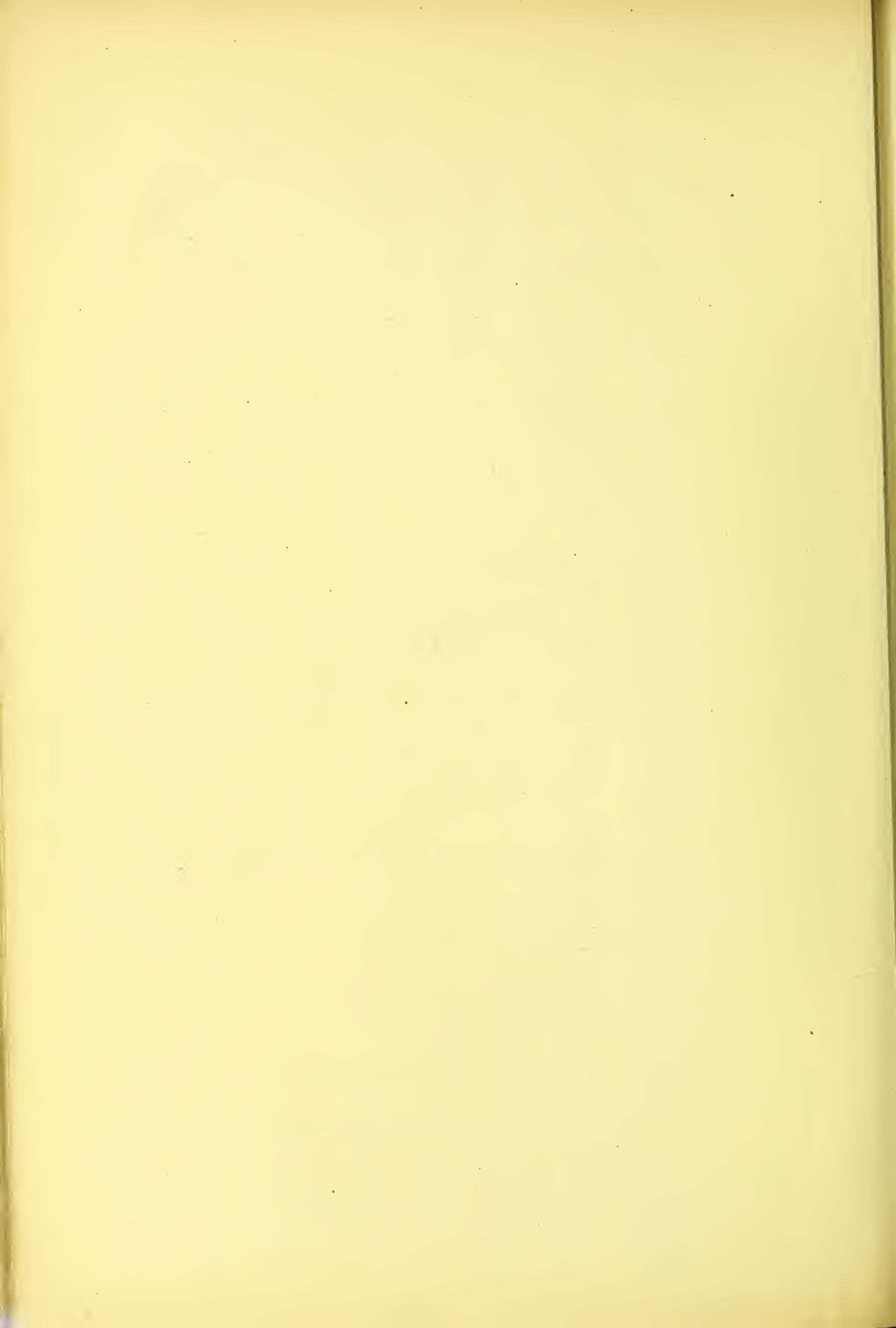
Ward

Insulated

Inoculated 2 G.P.s, each with 3 cc blood

1. Latent period 10 days.
2. Result negative

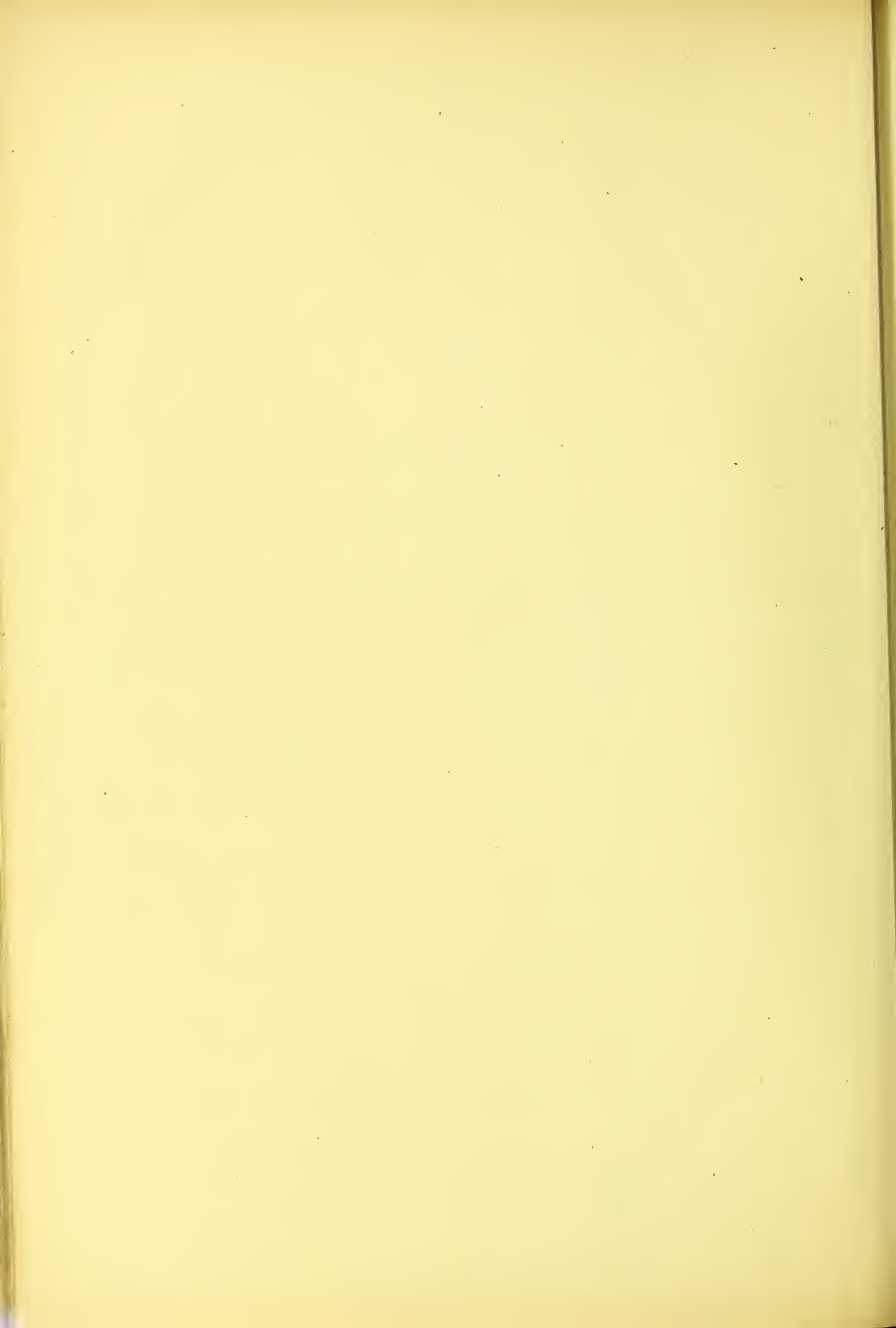




Age 10 Sex Gelding Colour Brown

Disease, "Surra" (fed upon rat's dung) \_\_\_\_\_ Date of Attack 28-9-93 \_\_\_\_\_ Result Death \_\_\_\_\_ Date of Result 16-1-94 \_\_\_\_\_ Register No. XC1 \_\_\_\_\_ Ward \_\_\_\_\_

[illegible][illegible]





## RECORDS OF TEMPERATURE, WATER TAKEN, URINE PASSED AND TOTAL UREA EXCRETED.

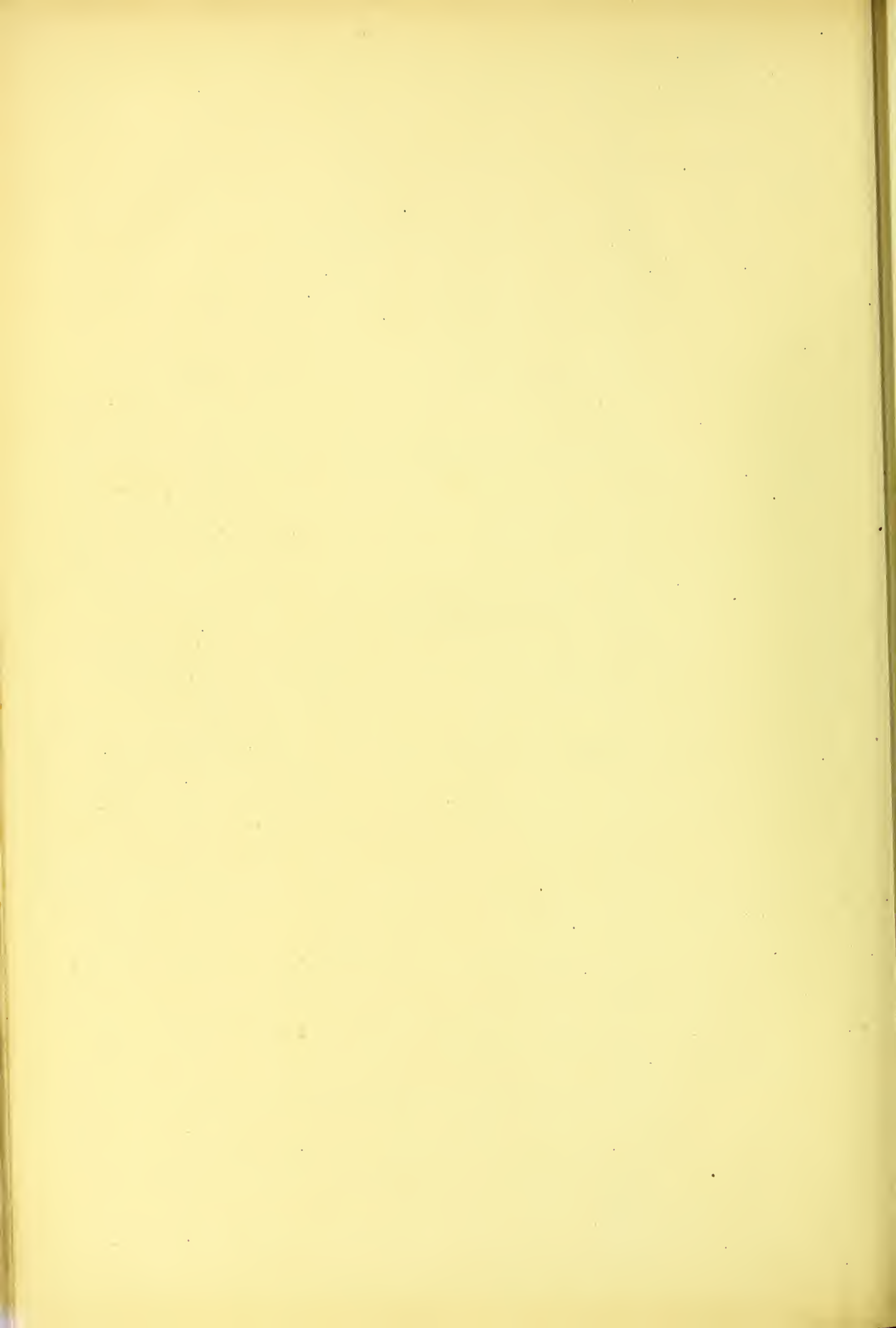
*Australian* \_\_\_\_\_ *Age* 10 \_\_\_\_\_ *Sex* Gelding \_\_\_\_\_ *Colour* Brown \_\_\_\_\_  
*Disease* "Surra" (feagun rats dung) \_\_\_\_\_ *Date of Attack* 28-9-93 \_\_\_\_\_ *Result* Death \_\_\_\_\_ *Date of Result* 16-1-94 \_\_\_\_\_ *Reinsir* No. XCI \_\_\_\_\_ *Ward* \_\_\_\_\_

[illegible]

|                    |                     |
|--------------------|---------------------|
| Total Urine        | Urine passed during |
| Water drunk during | 24 hours            |
| 24 hours           | Temperature         |
|                    | Haematocrit         |

x Inoculated G.P. with 0.3 cc blood.  
Latent Period 9 days

Dewan & Lutho Govt. Photoduplication Office, Poona, 1994



16th January 1894.—Autopsy immediately after death.

The body is somewhat emaciated. The mucous membrane of the mouth and lips are pallid. The nasal septum is congested. The extremities are fine and there is an absence of œdema from the under-surface of the abdomen.

*On section*.—The subcutaneous tissues are stained a pale yellow colour, while internally the organs and membranes present an orange hue.

*Thorax*.—There is no fluid in the pleural cavities and there are no pleuritic adhesions.

*Lungs*.—The organs are pale in colour and well distended with air, but there are a few dark coloured extravasations dotted over the surface of the tissue lying underneath the visceral pleuræ. *On section*, the tissues are red in colour and present a healthy appearance.

There are a few entric centimetres of fluid reddish-yellow in colour in the *pericardial sac*.

*Heart*.—Weighs 5 lbs. 11½ ozs. Externally the adipose tissue surrounding the base of the organ presents an orange colour, but is not petechiated. *On section* the right auricle and ventricle contain a certain amount of dark clots, and there are several sub-endocardial extravasations in the latter cavity, one measuring ½" × ¼" involving one of the curtains of the tricuspid valve. The left side of the heart is contracted and free from extravasations.

There is no fluid in the peritoneal cavity.

*Liver*.—Weighs 9 lbs. 6½ ozs. The capsule of the organ presents signs of an old perihepatitis and there are several small, dark purple coloured petechiæ dotted over the convex surface of the right lobe. *On section*, the tissues are firm and healthy in appearance.

*Spleen*.—Weighs 2 lbs. 11¼ ozs. Both surfaces are dotted over with dark brick-red coloured sub-capsular petechiæ. *On section*, the tissues are dark, but firm and healthy in appearance.

*Kidneys*.—Right weighs 1 lb. 2¼ ozs., the left 1 lb. 1½ ozs. The capsules strip easily. There are a few minute petechiæ dotted over the surface of the left organ, but the right is free. *On section* the tissues present a dark colour, but otherwise appear normal in character.

*Stomach*.—Is full of semi-fluid green food (lucerne grass). The *cuticular* portion is healthy in appearance, but the mucous membrane of the *villous* portion presents a few raised swellings. The nest of 'spiroptera megastoma.'

*Intestines*.—Present a healthy appearance.

*Bladder*.—The organ contains 21 ozs. of an orange colour, alkaline in reaction. The mucous membrane presents a somewhat congested appearance.

*Remarks*.—The animal as above stated was forwarded to Bombay Veterinary Hospital, Parel, on May 5th, 1893. The experiment commenced on the morning of May 6th and terminated on September 26th, 1893, on which latter date this animal together with Horse No. LXXXIX were sent back to the Laboratory Hospital at Poona. A period therefore of 145 days, commencing during the hottest and driest part of the year (May) and carried on during the whole of the rains was devoted to this experiment, having for its object the determination as to whether the excreta of rats in whose blood at the time of collection the hæmatozoon was present, could produce Surra in equines, when mixed with food.

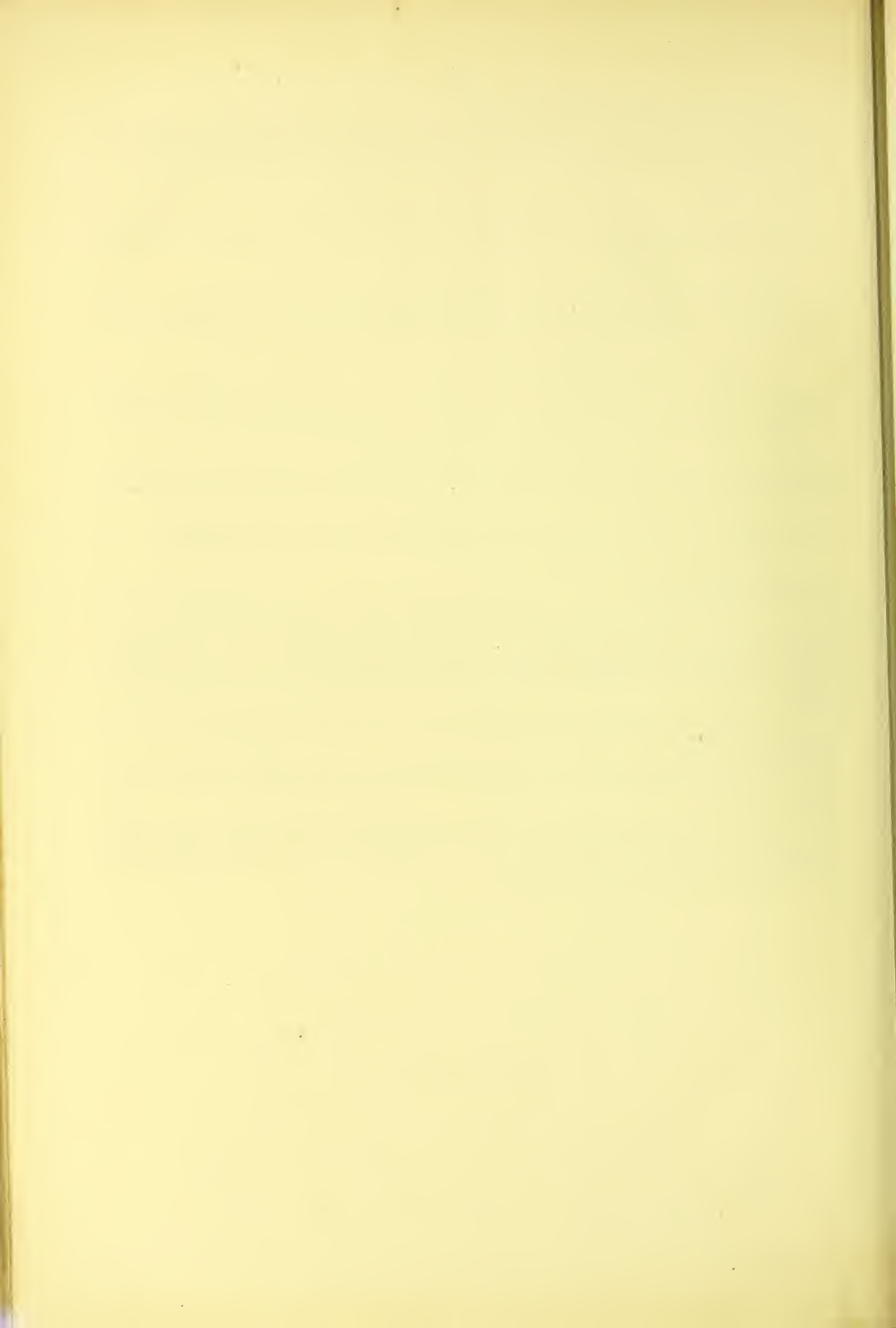
The temperature according to the chart kindly kept by Mr. N. D. Dhakmarvala during the animal's sojourn in Bombay never exceeded the limits of health, in fact during prolonged periods the diurnal variation never differed more than two-fifths of a degree.

It was not until twenty-four hours after the animal arrived at Poona on the Deccan plateau, 1,849 ft. elevation, that the urticarial eruption made its appearance and that the Surra organism was discovered on microscopical examination of the blood.

Of course, it may be said that animal simply contracted the disease in the ordinary way—from the fodder—during the rains. We have, however, the fact before us that the control animal Horse No. LXXXIX and all other horses in the same stable remained healthy, which certainly points to the probability of the animal under experiment having acquired Surra through the agency of Rat's excrement.

The period of incubation occupied in this case was 146 days.





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B.  
RAT SURRA

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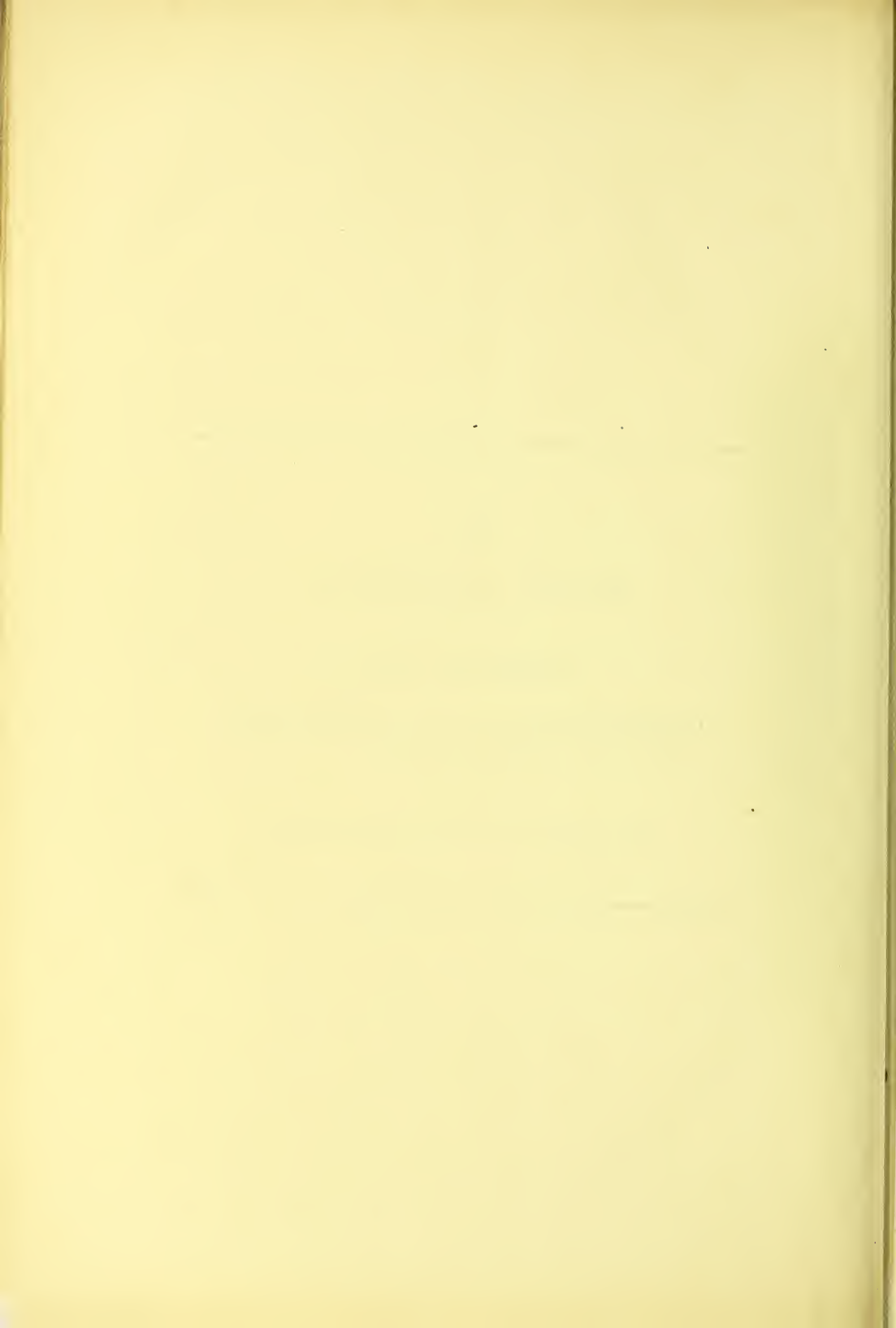
APPENDIX VIII.

SUBCUTANEOUS INOCULATION WITH THE BLOOD OF DIFFERENT ANIMALS:  
WHICH HAD BEEN PRIMARILY INOCULATED FROM HORSE No. XCI.  
(RAT EXCREMENT INGESTION.)

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HORSE No. XCV.—CAT No. III.—GUINEA PIG No. XXIII.

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APPENDIX VIII.

SUBCUTANEOUS INOCULATION WITH BLOOD OF DIFFERENT ANIMALS WHICH HAD BEEN PRIMARILY INOCULATED FROM HORSE No. XCI (RAT EXCREMENT.)

HORSE No. XCV.

A brown gelding, in fair health and condition.

| Date.         | Temperature °C. |       |      | Pulse. |      | Respiration. |      | Hæmatozoa, in Blood. | Day of Disease. | REMARKS.  |
|---------------|-----------------|-------|------|--------|------|--------------|------|----------------------|-----------------|---|
|               | A.M.            | NOON. | P.M. | A.M.   | P.M. | A.M.         | P.M. |                      |                 |   |
| 1893.         |                 |       |      |        |      |              |      |                      |                 |   |
| October 5 ... | ...             | ...   | 37·0 | ...    | 56   | ...          | 32   | Healthy.             | ...             |   |
| „ 6 ...       | 36·4            | ...   | 37·2 | 36     | 36   | 40           | 36   | „                    | ...             |   |
| „ 7 ..        | 36·4            | ...   | 37·3 | 36     | 40   | 16           | 36   | „                    | ...             |   |
| „ 8 ...       | 36·6            | ...   | 37·6 | 56     | 36   | 32           | 40   | „                    | ...             |   |
| „ 9 ...       | 36·8            | ...   | 37·0 | 32     | 36   | 32           | 36   | Absent.              | ...             | 5 P. M.—Inoculated over the left scapular region with 0·7 c. c. of blood containing very numerous hæmatozoa taken from the heart of a Guinea Pig immediately after death, which was originally inoculated from Horse No. XCI. |
| „ 10 ...      | 36·4            | 37·0  | 36·8 | 32     | 36   | 16           | 40   | Absent.              | ...             |   |
| „ 11 ...      | 37·2            | 37·4  | 37·0 | 36     | 40   | 32           | 20   | „                    | ...             |   |
| „ 12 ...      | 37·1            | 36·4  | 36·7 | 28     | 20   | 32           | 40   | „                    | ...             | There is a slightly raised swelling at the seat of inoculation, measuring 2"×1½" which is tender on manipulation. Conjunctivæ injected.   |
| „ 13 ...      | 37·1            | 37·3  | 37·5 | 40     | 40   | 48           | 28   | „                    | ...             | Conjunctivæ clear; the swelling is increased in size.   |
| „ 14 ...      | 37·6            | 39·3  | 39 0 | 28     | 40   | 28           | 32   | Few ...              | 1               | Animal dull, the swelling is less tense, and there is no tenderness on manipulation.  |
| „ 15 ...      | 39·6            | 40·2  | 39·6 | 36     | 40   | 24           | 36   | Swarming.            | 2               | Conjunctivæ yellow, the right presents an extravasation. Theswelling has decreased in size, and there is no tenderness.   |
| „ 16 ...      | 39·6            | 39·7  | 40·0 | 48     | 60   | 28           | 32   | „                    | 3               | The swelling is further decreased. Appetite continues good, and the fæces are normal in character.  |
| „ 17 ...      | 38·4            | 38·8  | 39·6 | 52     | 56   | 20           | 32   | „                    | 4               | The left conjunctivæ presents numerous petechiæ, also the mucous membranes of the nose. Slight discharge from nostrils.   |
| „ 18 ...      | 38·4            | 39·6  | ...  | 36     | ...  | 40           | ...  | Very numerous.       | 5               | The animal fell at 2·0 p.m. and Chloroform was administered.  |

CAT No. III.

A tabby, full grown, and apparently in good health and condition.

June 30th, 1894.—Inoculated with 0·15 c.c. of blood, containing very numerous hæmatozoa, taken from a Guinea Pig, immediately after death.

| Date.       | Temperature °C. |      | Condition of Blood. | Date.      | Temperature °C. |      | Condition of Blood. |
|-------------|-----------------|------|---------------------|------------|-----------------|------|---------------------|
|             | A.M.            | P.M. |                     |            | A.M.            | P.M. |                     |
| 1894.       |                 |      |                     | 1894.      |                 |      |                     |
| June 29 ... | 33·0            | 33·6 | Healthy.            | July 9 ... | 39·2            | 40·0 | Hæmatozoa Numerous. |
| „ 30 ...    | 38·5            | 39·0 | Inoculated.         | „ 10 ...   | 38·6            | 40·0 | „ Very numerous.    |
| July 1 ...  | 38·6            | 38·4 | Hæmatozoa Absent.   | „ 11 ...   | 38·1            | 40·0 | „ „                 |
| „ 2 ...     | 38·2            | 38·8 | „                   | „ 12 ...   | 40·6            | 40·0 | „ „                 |
| „ 3 ...     | 39·4            | 38·8 | „                   | „ 13 ...   | 39·2            | 40·3 | „ Few.              |
| „ 4 ...     | 39·2            | 39·8 | „                   | „ 14 ...   | 39·2            | 40·6 | „ Absent.           |
| „ 5 ...     | 40·0            | 39·0 | „                   | „ 15 ...   | 39·6            | 39·6 | „ „                 |
| „ 6 ...     | 39·2            | 40·0 | „                   | „ 16 ...   | 40·2            | 40·0 | „ „                 |
| „ 7 ...     | 39·6            | 40·2 | „ Few.              | „ 17 ...   | 39·4            | 40·3 | „ Few.              |
| „ 8 ...     | 39·4            | 39·1 | „                   | „ 18 ...   | 39·2            | 39·6 | „ Absent.           |

| Date.           | Temperature °C. |      | Condition of Blood. | Date.            | Temperature °C.   |      | Condition of Blood. |
|-----------------|-----------------|------|---------------------|------------------|---|------|---------------------|
|                 | A.M.            | P.M. |                     |                  | A.M.  | P.M. |                     |
| 1894.           |                 |      |                     | 1894.            |   |      |                     |
| July 19 ...     | 39.0            | 39.2 | Hæmatozoa Absent.   | September 22 ... | 39.3  | 39.6 | Hæmatozoa Absent.   |
| " 20 ...        | 39.7            | 39.6 | "                   | " 23 ..          | 39.6  | 39.6 | "                   |
| " 21 ...        | 39.4            | 39.8 | " Numerous.         | " 24 ...         | 40.0  | 39.6 | " Few.              |
| " 22 ...        | 39.3            | 40.0 | "                   | " 25 ...         | 40.2  | 40.0 | "                   |
| " 23 ...        | 39.6            | 39.8 | " Very numerous.    | " 26 ...         | 40.4  | 39.8 | "                   |
| " 24 ...        | 39.2            | 39.8 | "                   | " 27 ...         | 39.6  | 40.0 | "                   |
| " 25 ...        | 39.4            | 40.6 | "                   | " 28 ...         | 39.2  | 39.6 | "                   |
| " 26 ...        | 39.4            | 40.0 | "                   | " 29 ...         | 39.6  | 40.0 | " Absent.           |
| " 27 ...        | 39.4            | 39.4 | " Numerous.         | " 30 ...         | 39.9  | 40.1 | " Few.              |
| " 28 ...        | 39.0            | 39.6 | " Absent.           | October 1 ...    | 39.2  | 40.4 | "                   |
| " 29 ...        | 39.1            | 40.6 | "                   | " 2 ...          | 39.5  | 40.4 | " Absent.           |
| " 30 ...        | 39.7            | 40.4 | " Few.              | " 3 ...          | 38.9  | 39.4 | "                   |
| " 31 ...        | 39.8            | 39.8 | " Numerous.         | " 4 ...          | 39.4  | 39.6 | "                   |
| August 1 ...    | 39.6            | 40.0 | " Few.              | " 5 ...          | 39.2  | 40.6 | "                   |
| " 2 ...         | 39.0            | 40.0 | "                   | " 6 ...          | 39.7  | 40.6 | " Few.              |
| " 3 ...         | 38.8            | 40.0 | "                   | " 7 ...          | 40.2  | 40.6 | " Absent.           |
| " 4 ...         | 39.6            | 40.4 | " Numerous.         | " 8 ...          | 39.4  | 39.0 | "                   |
| " 5 ...         | 39.0            | 39.8 | " Few.              | " 9 ..           | 39.4  | 38.6 | "                   |
| " 6 ...         | 39.8            | 39.8 | "                   | " 10 ...         | 38.4  | 39.2 | "                   |
| " 7 ...         | 40.2            | 40.1 | "                   | " 11 ...         | 39.2  | 40.4 | "                   |
| " 8 ...         | 39.4            | 40.6 | " Numerous.         | " 12 ...         | 39.5  | 39.8 | " Few.              |
| " 9 ...         | 40.0            | 40.0 | " Absent.           | " 13 ...         | 39.8  | 40.2 | " Absent.           |
| " 10 ...        | 39.8            | 39.6 | "                   | " 14 ...         | 40.2  | 40.0 | "                   |
| " 11 ...        | 39.0            | 40.0 | "                   | " 15 ...         | 40.0  | 40.6 | " Few.              |
| " 12 ...        | 39.2            | 39.6 | " Few.              | " 16 ...         | 39.8  | 39.6 | " Absent.           |
| " 13 ...        | 40.4            | 40.2 | "                   | " 17 ...         | 39.2  | 40.2 | "                   |
| " 14 ...        | 40.1            | 40.6 | "                   | " 18 ...         | 39.3  | 40.0 | "                   |
| " 15 ...        | 39.4            | 39.0 | " Absent.           | " 19 ...         | 39.7  | 40.4 | "                   |
| " 16 ...        | 39.6            | 38.8 | "                   | " 20 ..          | 39.8  | 40.0 | "                   |
| " 17 ...        | 39.8            | 39.6 | "                   | " 21 ...         | 39.9  | 39.6 | "                   |
| " 18 ...        | 39.6            | 40.0 | "                   | " 22 ..          | 39.3  | 40.0 | "                   |
| " 19 ...        | 40.2            | 39.8 | " Few.              | " 23 ...         | 39.2  | 39.6 | "                   |
| " 20 ...        | 40.2            | 40.2 | "                   | " 24 ...         | 38.6  | 38.8 | "                   |
| " 21 ...        | 39.8            | 40.2 | "                   | " 25 ...         | 37.8  | 38.5 | "                   |
| " 22 ...        | 39.4            | 39.7 | " Absent.           | " 26 ...         | 38.7  | 40.1 | "                   |
| " 23 ...        | 39.6            | 39.0 | "                   | " 27 ...         | 39.4  | 39.0 | " Few.              |
| " 24 ...        | 39.3            | 39.2 | "                   | " 28 ...         | 39.4  | 40.2 | "                   |
| " 25 ...        | 39.4            | 39.4 | "                   | " 29 ...         | 38.9  | 39.6 | " Absent.           |
| " 26 ...        | 39.3            | 40.2 | "                   | " 30 ...         | 39.2  | 39.5 | "                   |
| " 27 ...        | 40.2            | 39.9 | "                   | " 31 ...         | 38.8  | 39.0 | "                   |
| " 28 ...        | 40.0            | 40.0 | "                   | November 1 ...   | 38.3  | 39.3 | "                   |
| " 29 ...        | 39.8            | 40.0 | " Few.              | " 2 ...          | 39.3  | 39.8 | "                   |
| " 30 ..         | 40.4            | 40.8 | " Numerous.         | " 3 ...          | 39.4  | 39.9 | "                   |
| " 31 ...        | 39.6            | 39.6 | " Absent.           | " 4 ...          | 39.2  | 39.2 | "                   |
| September 1 ... | 40.0            | 39.2 | "                   | " 5 ...          | 39.2  | 39.4 | "                   |
| " 2 ...         | 40.0            | 40.2 | "                   | " 6 ...          | 39.0  | 39.8 | "                   |
| " 3 ...         | 39.8            | 40.4 | "                   | " 7 ...          | 39.4  | 40.0 | "                   |
| " 4 ...         | 39.4            | 39.2 | "                   | " 8 ...          | 39.5  | 39.6 | "                   |
| " 5 ...         | 39.8            | 39.7 | "                   | " 9 ...          | 38.6  | 39.0 | "                   |
| " 6 ...         | 39.6            | 40.2 | " Few.              | " 10 ...         | 38.4  | 39.1 | "                   |
| " 7 ...         | 40.6            | 40.2 | " Numerous.         | " 11 ...         | 38.4  | 39.4 | "                   |
| " 8 ...         | 39.9            | 39.2 | " Absent.           | " 12 ...         | Frequent and violent epileptic fits between the 12th and 15th, lasting from one to two minutes. |      |                     |
| " 9 ...         | 39.2            | 39.8 | "                   | " 13 ...         |   |      |                     |
| " 10 ...        | 39.6            | 39.6 | "                   | " 14 ...         |   |      |                     |
| " 11 ...        | 40.0            | 40.1 | "                   | " 15 ...         |   |      |                     |
| " 12 ...        | 39.7            | 40.2 | "                   | " 16 ...         | 38.2  | 39.4 | Hæmatozoa Swarming. |
| " 13 ...        | 40.0            | 40.0 | "                   | " 17 ...         | 39.2  | 38.6 | " Few.              |
| " 14 ...        | 39.0            | 39.8 | "                   | " 18 ...         | 38.2  | 39.5 | "                   |
| " 15 ...        | 39.0            | 40.8 | " Few.              | " 19 ...         | 39.0  | 39.4 | " Absent.           |
| " 16 ...        | 39.0            | 39.4 | " Absent.           | " 20 ...         | 39.0  | 39.6 | " Few.              |
| " 17 ...        | 38.8            | 39.7 | "                   | " 21 ...         | 37.8  | 39.0 | " Numerous.         |
| " 18 ...        | 39.0            | 39.8 | "                   | " 22 ...         | 38.0  | 38.4 | " Swarming.         |
| " 19 ...        | 40.6            | 39.6 | " Few.              | " 23 ...         | 35.6  | 36.8 | "                   |
| " 20 ...        | 39.6            | 40.2 | " Absent.           | " 24 ...         | 35.3  | 35.0 | "                   |
| " 21 ...        | 39.6            | 39.4 | "                   | " 25 ...         | Death.  |      |                     |

GUINEA PIG No. XXIII.

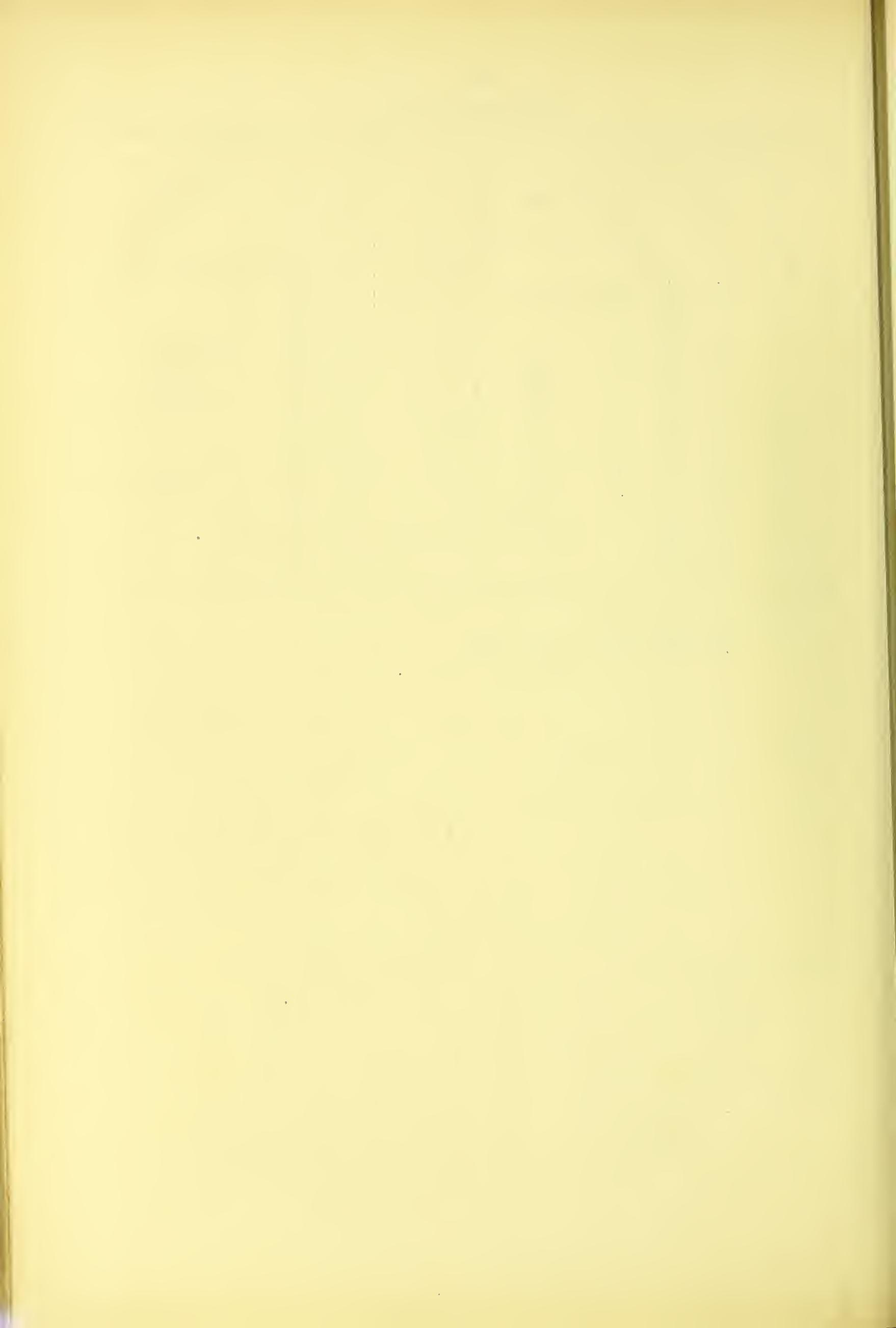
June 30th, 1894.—Inoculated with 0.15 c.c. of blood, containing very numerous hæmatozoa, taken from Guinea Pig No. XXI immediately after death.

| Date.   | Temperature °C. |           | Condition of Blood. | Date.    | Temperature °C. |           | Condition of Blood. |
|---------|-----------------|-----------|---------------------|----------|-----------------|-----------|---------------------|
|         | A.M.            | P.M.      |                     |          | A.M.            | P.M.      |                     |
| 1894.   |                 |           |                     | 1894.    |                 |           |                     |
| June 29 | ...             | ...       |                     | July 21  | ...             | 39.2 39.8 | Hæmatozoa Swarming. |
| " 30    | ...             | ...       |                     | " 22     | ...             | 39.4 39.8 | " "                 |
| July 1  | ...             | 38.8 39.2 | Hæmatozoa Absent.   | " 23     | ...             | 39.0 39.8 | " "                 |
| " 2     | ...             | 38.6 39.4 | " "                 | " 24     | ...             | 39.4 39.6 | " "                 |
| " 3     | ...             | 38.2 39.4 | " "                 | " 25     | ...             | 39.4 39.8 | " "                 |
| " 4     | ...             | 38.2 39.7 | " "                 | " 26     | ...             | 39.3 39.7 | " "                 |
| " 5     | ...             | 38.4 39.1 | " "                 | " 27     | ...             | 39.6 39.8 | " Very numerous.    |
| " 6     | ...             | 39.1 40.4 | " "                 | " 28     | ...             | 38.8 40.0 | " Numerous.         |
| " 7     | ...             | 40.1 40.8 | " Few.              | " 29     | ...             | 39.0 39.5 | " Few.              |
| " 8     | ...             | 40.2 39.6 | " Absent.           | " 30     | ...             | 39.4 39.6 | " Very numerous.    |
| " 9     | ...             | 38.8 38.4 | " "                 | " 31     | ...             | 39.4 39.4 | " Swarming.         |
| " 10    | ...             | 38.8 40.4 | " Few.              | August 1 | ...             | 39.2 39.5 | " "                 |
| " 11    | ...             | 40.0 40.2 | " "                 | " 2      | ...             | 39.4 39.6 | " "                 |
| " 12    | ...             | 38.6 39.0 | " "                 | " 3      | ...             | 39.4 39.6 | " "                 |
| " 13    | ...             | 38.7 39.4 | " Absent.           | " 4      | ...             | 39.0 39.8 | " Very numerous.    |
| " 14    | ...             | 39.0 39.8 | " "                 | " 5      | ...             | 39.6 39.5 | " Swarming.         |
| " 15    | ...             | 39.1 39.8 | " Few.              | " 6      | ...             | 39.2 39.6 | " "                 |
| " 16    | ...             | 39.1 39.8 | " Numerous.         | " 7      | ...             | 39.6 39.6 | " "                 |
| " 17    | ...             | 39.2 39.5 | " "                 | " 8      | ...             | 39.2 39.5 | " "                 |
| " 18    | ...             | 39.2 39.5 | " Very numerous.    | " 9      | ...             | 39.4 40.0 | " "                 |
| " 19    | ...             | 38.7 39.4 | " "                 | " 10     | ...             | 39.3 39.4 | " "                 |
| " 20    | ...             | 39.6 39.8 | " "                 | " 11     | ...             | 37.7 39.2 | " "                 |

Death.

Autopsy.—Body weight 347 grammes.  
" Spleen weight 1.7 "  
" Ratio of spleen weight to body weight 1 : 204.





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# RAT SURRA.

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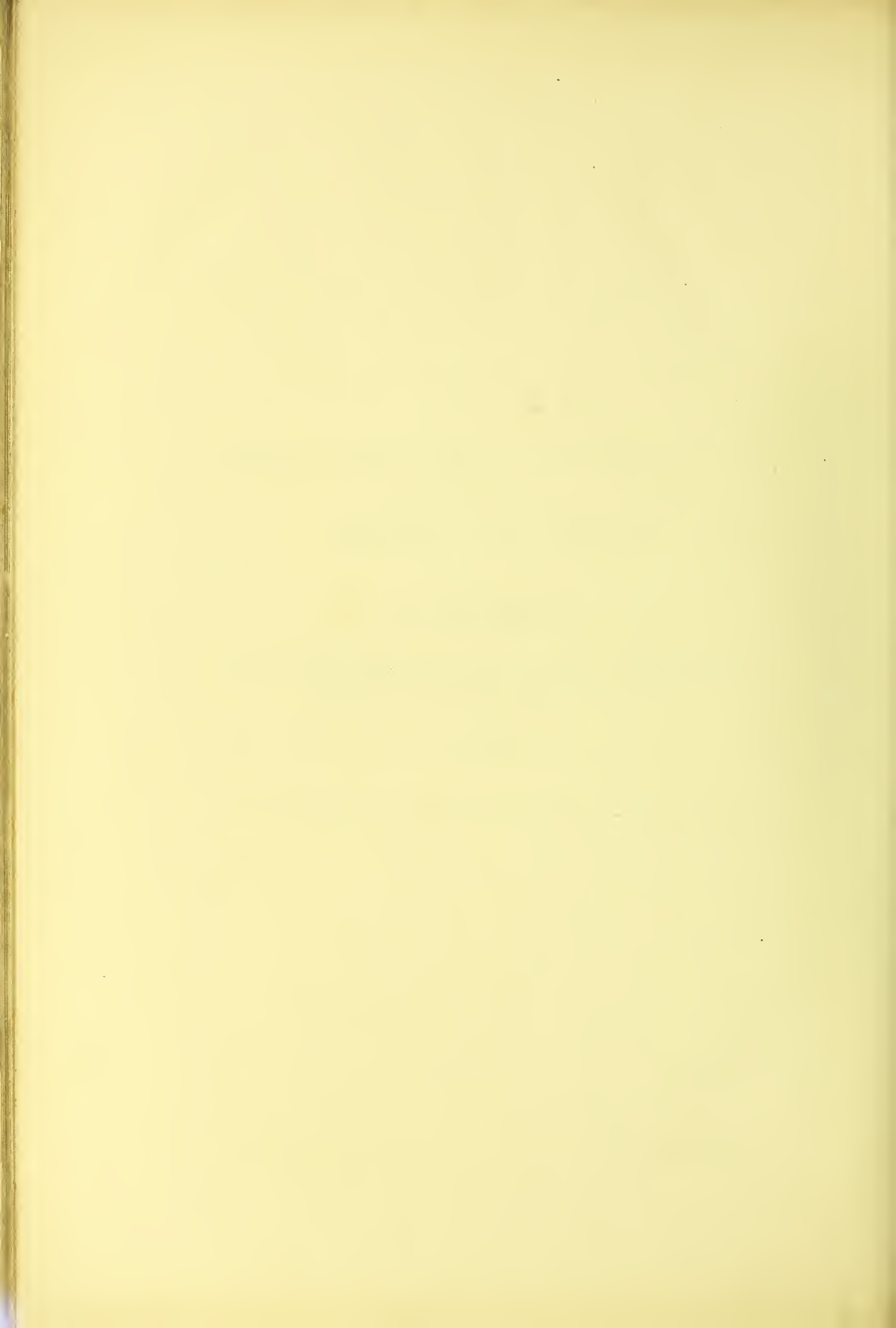
## APPENDIX IX.

TRANSMISSION OF THE HÆMATOZOON FROM THE MOTHER  
TO THE OFFSPRING THROUGH SUCKLING.

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CALF No I.

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## CALF No. I.

Calf. Deccani, aged 3 weeks, Fawn colour, healthy and in good condition.

Disease contracted by offspring through milk of mother. .

Calf, 3 weeks old, suckling mother. Mother inoculated with Rat-Surra blood, previously passed through Horses Nos. LXII and LXVII, and Donkey No. II. Hamatozoon appeared in calf for 24 hours only, 42 days after inoculation of cow. Inoculation subcutaneously 123 days after paroxysm. Hamatozoa appeared on 4th day. Three paroxysms of 2, 1 and 1 days, with two intermissions of 3 and 123 days, respectively. Death from rinderpest occurred 100 days after last paroxysm.

| Date.  | Temperature° C. |        |        | Pulse. |      | Respiration. |      | Hamatozoa<br>in Blood. | Urine.  |         |           |       |               |
|--|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|-----------|-------|---------------|
|  | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction. | Albn. | Hip.<br>Acid. |
| 1892.  |                 |        |        |        |      |              |      |                        |         |         |           |       |               |
| August 24  | ...             | ...    | 39.3   | 61     | 60   | ...          | 16   | ...                    |         |         |           |       |               |
| The calf sucks its mother 3 times daily, at 7 A.M., 1 P.M., and 6 P.M.   |                 |        |        |        |      |              |      |                        |         |         |           |       |               |
| " 25   | ...             | 39.3   | ...    | 40.0   | 52   | 44           | 28   | 28                     | ...     |         |           |       |               |
| " 26   | ...             | 40.0   | ...    | 40.2   | 56   | 60           | 24   | 16                     | ...     |         |           |       |               |
| " 27   | ...             | 39.1   | ...    | 40.2   | 40   | 48           | 20   | 20                     | ...     |         |           |       |               |
| " 28   | ...             | 39.3   | ...    | 39.3   | 40   | 48           | 24   | 20                     | ...     |         |           |       |               |
| The mother was to-day inoculated with Surra blood originally derived from the rat, but previously passed through two Horses Nos. LXVII and LXII, and Donkey No. 1.   |                 |        |        |        |      |              |      |                        |         |         |           |       |               |
| " 29   | ...             | 38.8   | 40.0   | 40.0   | 54   | 60           | 21   | 16                     | Absent. |         |           |       |               |
| " 30   | ...             | 39.3   | 39.3   | 39.3   | 48   | 52           | 28   | 18                     | "       |         |           |       |               |
| " 31   | ...             | 39.3   | 39.5   | 40.0   | 52   | 60           | 18   | 24                     | "       |         |           |       |               |
| September 1  | ...             | 39.3   | 39.8   | 40.3   | 52   | 56           | 10   | 24                     | "       |         |           |       |               |
| " 2  | ...             | 39.3   | 40.0   | 39.7   | 56   | 52           | 20   | 16                     | "       |         |           |       |               |
| " 3  | ...             | 39.3   | 39.8   | 39.7   | 64   | 72           | 20   | 20                     | "       |         |           |       |               |
| " 4  | ...             | 38.6   | 39.8   | 40.0   | 56   | 48           | 20   | 20                     | "       |         |           |       |               |
| " 5  | ...             | 39.0   | 39.8   | 39.8   | 44   | 56           | 20   | 20                     | "       |         |           |       |               |
| " 6  | ...             | 38.0   | 38.7   | 40.0   | 72   | 56           | 12   | 16                     | "       |         |           |       |               |
| " 7  | ...             | 39.1   | 39.4   | 40.1   | 48   | 52           | 16   | 16                     | "       |         |           |       |               |
| " 8  | ...             | 39.3   | 39.7   | 39.8   | 52   | 60           | 16   | 16                     | "       |         |           |       |               |
| " 9  | ...             | 39.3   | 39.3   | 39.3   | 44   | 60           | 16   | 16                     | "       |         |           |       |               |
| " 10   | ...             | 39.3   | 39.3   | 39.3   | 56   | 60           | 24   | 20                     | "       |         |           |       |               |
| Slight diarrhoea produced by green food.   |                 |        |        |        |      |              |      |                        |         |         |           |       |               |
| " 11   | ...             | 39.1   | 39.6   | 37.7   | 100  | 92           | 16   | 16                     | "       |         |           |       |               |
| " 12   | ...             | 38.6   | 39.2   | 39.8   | 64   | 60           | 12   | 20                     | "       |         |           |       |               |
| " 13   | ...             | 39.2   | 39.3   | 39.3   | 56   | 64           | 20   | 24                     | "       |         |           |       |               |
| " 14   | ...             | 39.3   | 39.3   | 39.3   | 60   | 64           | 16   | 16                     | "       |         |           |       |               |
| " 15   | ...             | 39.2   | 39.3   | 39.3   | 60   | 68           | 16   | 22                     | "       |         |           |       |               |
| " 16   | ...             | 39.2   | 39.3   | 40.0   | 64   | 64           | 16   | 18                     | "       |         |           |       |               |
| " 17   | ...             | 39.1   | 39.3   | 39.3   | 60   | 64           | 24   | 14                     | "       |         |           |       |               |
| " 18   | ...             | 39.2   | 39.6   | 39.3   | 64   | 64           | 16   | 24                     | "       |         |           |       |               |
| " 19   | ...             | 38.0   | 39.3   | 40.2   | 64   | 60           | 16   | 16                     | "       |         |           |       |               |
| " 20   | ...             | 39.3   | 39.7   | 40.2   | 60   | 64           | 16   | 16                     | "       |         |           |       |               |
| " 21   | ...             | 39.3   | 39.7   | 40.0   | 60   | 64           | 16   | 16                     | "       |         |           |       |               |
| " 22   | ...             | 38.6   | 39.3   | 40.0   | 48   | 56           | 16   | 16                     | "       |         |           |       |               |
| " 23   | ...             | 39.1   | 39.3   | 39.7   | 60   | 60           | 16   | 20                     | "       |         |           |       |               |
| " 24   | ...             | 39.3   | 40.0   | 40.3   | 64   | 64           | 18   | 12                     | "       |         |           |       |               |
| " 25   | ...             | 39.3   | 39.2   | 39.3   | 72   | 64           | 16   | 16                     | "       |         |           |       |               |
| " 26   | ...             | 38.4   | 39.2   | 40.0   | 64   | 60           | 16   | 16                     | "       |         |           |       |               |
| " 27   | ...             | 39.1   | 39.3   | 40.0   | 60   | 64           | 16   | 20                     | "       |         |           |       |               |
| " 28   | ...             | 38.8   | 39.3   | 39.7   | 52   | 64           | 20   | 20                     | "       |         |           |       |               |
| " 29   | ...             | 38.5   | 39.0   | 39.3   | 48   | 56           | 16   | 16                     | "       |         |           |       |               |
| " 30   | ...             | 39.0   | 39.2   | 39.3   | 56   | 60           | 20   | 16                     | "       |         |           |       |               |
| October 1  | ...             | 37.4   | 38.5   | 39.2   | 60   | 56           | 12   | 24                     | "       |         |           |       |               |
| " 2  | ...             | 39.0   | 39.3   | 39.3   | 52   | 56           | 16   | 16                     | "       |         |           |       |               |
| " 3  | ...             | 39.3   | 40.0   | 40.3   | 64   | 64           | 24   | 20                     | "       |         |           |       |               |
| " 4  | ...             | 39.2   | 39.3   | 40.4   | 60   | 60           | 24   | 20                     | "       |         |           |       |               |
| " 5  | ...             | 38.0   | 39.0   | 40.1   | 56   | 68           | 16   | 28                     | "       |         |           |       |               |
| " 6  | ...             | 38.3   | 40.3   | 40.1   | 60   | 64           | 24   | 24                     | "       |         |           |       |               |
| " 7  | ...             | 38.5   | 39.6   | 39.6   | 60   | 64           | 16   | 16                     | "       |         |           |       |               |
| " 8  | ...             | 38.6   | 39.4   | 39.4   | 60   | 60           | 16   | 16                     | "       |         |           |       |               |
| The secretion of milk in the cow is decreasing.  |                 |        |        |        |      |              |      |                        |         |         |           |       |               |
| " 9  | ...             | 37.8   | 39.5   | 39.5   | 52   | 60           | 20   | 20                     | Few.    |         |           |       |               |
| This morning on microscopical examination the blood presents all the appearances of that usually observed in well marked Surra cases. A few very long hamatozoa were present, but never exceeding three in a field of the microscope. The infusoria found were vigorous and active in their movements, and what may be termed the dorsal membrane was plainly visible on each. |                 |        |        |        |      |              |      |                        |         |         |           |       |               |
| " 10   | ...             | 38.1   | 38.5   | 39.4   | 56   | 64           | 16   | 16                     | Absent. |         |           |       |               |
| " 11   | ...             | 38.6   | 38.8   | 39.3   | 60   | 64           | 16   | 16                     | "       |         |           |       |               |
| " 12   | ...             | 38.4   | 38.4   | 39.3   | 52   | 64           | 16   | 16                     | "       |         |           |       |               |
| " 13   | ...             | 38.2   | 38.6   | 39.1   | 52   | 60           | 16   | 16                     | "       |         |           |       |               |

| Date.    |    |     | Temperature° C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |            |          |               |       |      |
|----------|----|-----|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|------------|----------|---------------|-------|------|
|          |    |     | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Re-action. | Albumen. | Hip.<br>Acid. |       |      |
| 1892.    |    |     |                 |        |        |        |      |              |      |                        |         |         |            |          |               |       |      |
| October  | 14 | ... | 38.5            | 39.1   | 39.3   | 56     | 64   | 20           | 16   | Absent...              | Clear   | ...     | 1,022      | Alkaline | Trace         | ...   | Nil. |
| "        | 15 | ... | 39.0            | 39.4   | 40.8   | 60     | 64   | 16           | 20   | " ...                  | "       | ...     | 1,033      | "        | ...           | Nil   | ...  |
| "        | 16 | ... | 40.1            | 40.1   | 40.1   | 60     | 64   | 16           | 20   | " ...                  | "       | ...     | 1,038      | "        | ...           | 1/40  | "    |
| "        | 17 | ... | 38.7            | 40.2   | 39.8   | 56     | 60   | 16           | 20   | " ...                  | "       | ...     | 1,030      | "        | ...           | 1/40  | "    |
| "        | 18 | ... | 38.7            | 39.0   | 39.8   | 60     | 64   | 20           | 20   | " ...                  | "       | ...     | 1,030      | "        | ...           | Nil   | ...  |
| "        | 19 | ... | 38.6            | 39.0   | 40.0   | 60     | 64   | 16           | 16   | " ...                  | "       | ...     | 1,034      | "        | ...           | Trace | ...  |
| "        | 20 | ... | 38.7            | 39.3   | 39.6   | 56     | 52   | 16           | 20   | " ...                  | "       | ...     | 1,035      | "        | ...           | "     | ...  |
| "        | 21 | ... | 39.0            | 39.0   | 39.3   | 48     | 64   | 20           | 20   | " ...                  | Turbid  | ...     | 1,036      | "        | ...           | Nil   | ...  |
| "        | 22 | ..  | 38.6            | 39.2   | 39.1   | 52     | 60   | 16           | 16   | " ...                  | "       | ...     | 1,022      | "        | ...           | 1/40  | "    |
| "        | 23 | ... | 38.6            | 38.8   | 39.2   | 64     | 64   | 24           | 24   | " ...                  | Clear   | ...     | 1,022      | "        | ...           | Trace | ...  |
| "        | 24 | ... | 38.4            | 38.6   | 39.1   | 60     | 64   | 16           | 16   | " ...                  | "       | ...     | 1,022      | "        | ...           | "     | ...  |
| "        | 25 | ... | 39.0            | 39.0   | 39.2   | 64     | 64   | 20           | 16   | " ...                  | "       | ...     | 1,028      | "        | ...           | 1/26  | "    |
| "        | 26 | ... | 38.6            | 38.0   | 39.7   | 60     | 60   | 12           | 12   | " ...                  | "       | ...     | 1,036      | "        | ...           | Trace | ...  |
| "        | 27 | ... | 38.6            | 38.8   | 39.0   | 56     | 64   | 20           | 16   | " ...                  | "       | ...     | 1,030      | "        | ...           | 1/34  | "    |
| "        | 28 | ... | 38.6            | 38.8   | 39.5   | 64     | 64   | 16           | 20   | " ...                  | "       | ...     | 1,032      | "        | ...           | 1/24  | "    |
| "        | 29 | ... | 38.1            | 38.5   | 39.2   | 64     | 64   | 16           | 20   | " ...                  | Turbid  | ...     | 1,030      | "        | ...           | Trace | ...  |
| "        | 30 | ... | 38.5            | 38.5   | 39.0   | 60     | 68   | 20           | 24   | " ...                  | "       | ...     | 1,024      | "        | ...           | 1/34  | "    |
| "        | 31 | ... | 39.0            | 38.6   | 39.4   | 64     | 60   | 20           | 20   | " ...                  | "       | ...     | 1,024      | "        | ...           | Trace | ...  |
| November | 1  | ... | 38.4            | 38.9   | 39.3   | 60     | 64   | 16           | 20   | " ...                  | "       | ...     | 1,024      | "        | ...           | "     | ...  |
| "        | 2  | ..  | 37.6            | 38.2   | 39.0   | 60     | 60   | 20           | 15   | " ...                  | "       | ...     | 1,026      | "        | ...           | "     | ...  |
| "        | 3  | ... | 38.6            | 38.4   | 39.7   | 60     | 64   | 20           | 20   | " ...                  | "       | ...     | 1,022      | "        | ...           | 1/33  | "    |
| "        | 4  | ... | 38.6            | 39.0   | 39.8   | 64     | 64   | 20           | 20   | " ...                  | Clear   | ...     | 1,026      | "        | ...           | Trace | ...  |
| "        | 5  | ... | 39.0            | 38.8   | 40.0   | 64     | 64   | 20           | 20   | " ...                  | "       | ...     | 1,016      | "        | ...           | "     | ...  |
| "        | 6  | ... | 39.2            | 39.3   | 39.4   | 56     | 64   | 24           | 20   | " ...                  | Turbid  | ...     | 1,024      | "        | ...           | "     | ...  |

The cow has now ceased to give any milk.

|          |    |     |      |      |      |    |    |    |    |           |        |     |       |   |     |       |        |
|----------|----|-----|------|------|------|----|----|----|----|-----------|--------|-----|-------|---|-----|-------|--------|
| "        | 7  | ... | 38.6 | 39.1 | 39.0 | 64 | 64 | 20 | 20 | Absent... | Clear  | ... | 1,028 | " | ... | 1/30  | "      |
| "        | 8  | ... | 39.0 | 38.8 | 39.6 | 64 | 64 | 20 | 20 | "         | "      | ... | 1,032 | " | ... | 1/40  | "      |
| "        | 9  | ... | 38.8 | 38.8 | 39.0 | 64 | 64 | 16 | 20 | "         | Turbid | ... | 1,042 | " | ... | 1/36  | "      |
| "        | 10 | ... | 38.2 | 38.0 | 38.4 | 60 | 64 | 16 | 16 | "         | Clear  | ... | 1,020 | " | ... | 1/36  | "      |
| "        | 11 | ... | 37.8 | 39.5 | 39.6 | 64 | 64 | 20 | 16 | "         | Turbid | ... | 1,036 | " | ... | 1/40  | "      |
| "        | 12 | ... | 38.2 | 39.8 | 39.8 | 60 | 64 | 16 | 20 | "         | Clear  | ... | 1,028 | " | ... | Nil   | "      |
| "        | 13 | ... | 38.3 | 38.6 | 40.0 | 64 | 64 | 24 | 24 | "         | Turbid | ... | 1,030 | " | ... | Trace | "      |
| "        | 14 | ... | 38.0 | 38.6 | 39.8 | 64 | 64 | 16 | 24 | "         | "      | ... | 1,032 | " | ... | "     | "      |
| "        | 15 | ... | 38.1 | 37.4 | 39.6 | 52 | 68 | 20 | 28 | "         | "      | ... | 1,036 | " | ... | "     | "      |
| "        | 16 | ... | 37.8 | 38.4 | 39.0 | 64 | 64 | 24 | 16 | "         | "      | ... | 1,028 | " | ... | 1/24  | "      |
| "        | 17 | ... | 37.7 | 37.9 | 40.0 | 64 | 64 | 12 | 24 | "         | "      | ... | 1,032 | " | ... | 1/32  | "      |
| "        | 18 | ... | 37.4 | 37.9 | 40.0 | 52 | 64 | 12 | 24 | "         | "      | ... | 1,036 | " | ... | 2/33  | "      |
| "        | 19 | ... | 38.1 | 38.6 | 39.8 | 64 | 64 | 12 | 20 | "         | "      | ... | 1,028 | " | ... | 1/26  | "      |
| "        | 20 | ... | 38.4 | 38.0 | 40.0 | 60 | 64 | 20 | 24 | "         | "      | ... | 1,041 | " | ... | 2/40  | "      |
| "        | 21 | ... | 36.2 | 37.4 | 38.8 | 64 | 64 | 12 | 16 | "         | "      | ... | 1,034 | " | ... | 1/28  | "      |
| "        | 22 | ... | 38.0 | 38.2 | 40.1 | 64 | 64 | 16 | 24 | "         | "      | ... | 1,034 | " | ... | 1/20  | 1/10   |
| "        | 23 | ... | 38.0 | 38.9 | 38.8 | 64 | 68 | 20 | 24 | "         | "      | ... | 1,030 | " | ... | Nil   | Nil.   |
| "        | 24 | ... | 38.1 | 38.5 | 40.0 | 64 | 68 | 20 | 24 | "         | "      | ... | 1,026 | " | ... | "     | "      |
| "        | 25 | ... | 38.0 | 38.0 | 40.1 | 64 | 64 | 20 | 24 | "         | "      | ... | 1,042 | " | ... | "     | "      |
| "        | 26 | ... | 38.2 | 38.2 | 39.8 | 64 | 64 | 16 | 24 | "         | "      | ... | 1,034 | " | ... | "     | "      |
| "        | 27 | ... | 37.3 | 38.3 | 38.6 | 64 | 64 | 16 | 16 | "         | "      | ... | 1,040 | " | ... | 1/25  | "      |
| "        | 28 | ... | 37.2 | 37.2 | 39.8 | 64 | 72 | 16 | 16 | "         | "      | ... | 1,050 | " | ... | Trace | "      |
| "        | 29 | ... | 37.6 | 38.2 | 39.6 | 64 | 64 | 16 | 20 | "         | "      | ... | 1,046 | " | ... | Nil   | "      |
| "        | 30 | ... | 37.6 | 38.0 | 40.2 | 64 | 64 | 16 | 20 | "         | "      | ... | 1,028 | " | ... | 1/29  | "      |
| December | 1  | ... | 37.4 | 38.0 | 39.1 | 64 | 64 | 12 | 16 | "         | "      | ... | 1,042 | " | ... | 1/45  | "      |
| "        | 2  | ... | 37.0 | 37.4 | 39.4 | 64 | 64 | 20 | 20 | "         | "      | ... | 1,030 | " | ... | 1/40  | "      |
| "        | 3  | ... | 37.2 | 38.4 | 39.6 | 64 | 64 | 16 | 16 | "         | "      | ... | 1,054 | " | ... | 1/50  | Trace. |
| "        | 4  | ... | 37.5 | 38.0 | 38.6 | 64 | 64 | 16 | 12 | "         | "      | ... | 1,040 | " | ... | 1/35  | Nil.   |
| "        | 5  | ... | 36.8 | 38.4 | 38.8 | 52 | 64 | 12 | 16 | "         | "      | ... | 1,044 | " | ... | Trace | "      |
| "        | 6  | ... | 36.8 | 38.0 | 38.9 | 64 | 64 | 16 | 12 | "         | "      | ... | 1,028 | " | ... | 1/36  | "      |
| "        | 7  | ... | 36.7 | 38.2 | 39.2 | 64 | 64 | 12 | 12 | "         | "      | ... | 1,024 | " | ... | 1/90  | "      |
| "        | 8  | ... | 37.6 | 38.0 | 39.0 | 52 | 64 | 12 | 12 | "         | "      | ... | 1,036 | " | ... | 1/29  | "      |
| "        | 9  | ... | 36.5 | 37.4 | 38.6 | 60 | 64 | 12 | 16 | "         | "      | ... | 1,024 | " | ... | 1/50  | "      |
| "        | 10 | ... | 37.0 | 37.4 | 38.6 | 60 | 60 | 12 | 12 | "         | "      | ... | 1,054 | " | ... | 1/40  | "      |
| "        | 11 | ... | 37.4 | 38.6 | 39.2 | 60 | 64 | 16 | 16 | "         | "      | ... | ...   | " | ... | ...   | "      |
| "        | 12 | ... | 37.3 | 38.5 | 40.2 | 64 | 64 | 16 | 16 | "         | Clear  | ... | 1,026 | " | ... | 1/56  | "      |
| "        | 13 | ... | 37.3 | 37.8 | 38.3 | 56 | 64 | 16 | 16 | "         | Turbid | ... | 1,064 | " | ... | 1/35  | "      |
| "        | 14 | ... | 36.8 | 37.8 | 39.2 | 56 | 64 | 12 | 16 | "         | "      | ... | 1,042 | " | ... | 1/35  | "      |
| "        | 15 | ... | 37.8 | 39.8 | 39.6 | 68 | 64 | 16 | 16 | "         | Clear  | ... | 1,027 | " | ... | 1/35  | "      |
| "        | 16 | ... | 38.2 | 38.2 | 38.8 | 56 | 64 | 16 | 16 | "         | Turbid | ... | 1,020 | " | ... | Trace | "      |
| "        | 17 | ... | 36.8 | 38.1 | 39.2 | 56 | 64 | 16 | 16 | "         | "      | ... | 1,036 | " | ... | "     | "      |
| "        | 18 | ... | 37.4 | 38.2 | 39.0 | 56 | 64 | 12 | 16 | "         | "      | ... | 1,038 | " | ... | "     | "      |
| "        | 19 | ... | 38.2 | 38.6 | 39.3 | 56 | 64 | 16 | 16 | "         | Clear  | ... | 1,046 | " | ... | Nil   | "      |
| "        | 20 | ... | 37.5 | 37.5 | 38.8 | 56 | 64 | 12 | 16 | "         | "      | ... | 1,030 | " | ... | "     | "      |
| "        | 21 | ... | 37.0 | 37.6 | 39.0 | 56 | 60 | 12 | 12 | "         | Turbid | ... | 1,034 | " | ... | "     | "      |



| Date.    |    |     | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |            |          |               |        |        |
|----------|----|-----|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|------------|----------|---------------|--------|--------|
|          |    |     | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Re-action. | Albumen. | Hip.<br>Acid. |        |        |
| 1892.    |    |     |                 |        |        |        |      |              |      |                        |         |         |            |          |               |        |        |
| December | 22 | ... | 37.0            | 37.6   | 39.6   | 48     | 72   | 16           | 16   | Absent.                | Clear   | ...     | 1,024      | Alkaline | ...           | Nil.   | Nil.   |
| "        | 23 | ... | 37.5            | 38.6   | 39.0   | 56     | 64   | 16           | 16   | "                      | "       | ...     | 1,034      | "        | ...           | "      | "      |
| "        | 24 | ... | 37.2            | 38.2   | 39.4   | 64     | 64   | 12           | 16   | "                      | "       | ...     | 1,018      | "        | ...           | "      | "      |
| "        | 25 | ... | 38.1            | 38.4   | 39.7   | 60     | 68   | 16           | 16   | "                      | Turbid  | ...     | 1,038      | "        | ...           | "      | "      |
| "        | 26 | ... | 38.1            | 38.5   | 39.1   | 60     | 64   | 12           | 16   | "                      | Clear   | ...     | 1,026      | "        | ...           | 1/40   | "      |
| "        | 27 | ... | 38.1            | 38.3   | 39.0   | 64     | 68   | 12           | 12   | "                      | "       | ...     | 1,030      | "        | ...           | 1/42   | "      |
| "        | 28 | ... | 37.4            | 38.3   | 39.1   | 60     | 72   | 8            | 16   | "                      | "       | ...     | 1,016      | "        | ...           | Nil.   | "      |
| "        | 29 | ... | 38.0            | 38.7   | 39.2   | 64     | 60   | 16           | 16   | "                      | "       | ...     | 1,042      | "        | ...           | "      | "      |
| "        | 30 | ... | 37.6            | 38.4   | 38.8   | 60     | 60   | 12           | 12   | "                      | "       | ...     | 1,046      | "        | ...           | 1/54   | "      |
| "        | 31 | ... | 37.4            | 38.4   | 39.0   | 64     | 64   | 16           | 16   | "                      | "       | ...     | 1,048      | "        | ...           | 1/37   | "      |
| 1893.    |    |     |                 |        |        |        |      |              |      |                        |         |         |            |          |               |        |        |
| January  | 1  | ... | 37.4            | 38.7   | 39.0   | 60     | 64   | 12           | 16   | "                      | "       | ...     | 1,038      | "        | ...           | Trace. | "      |
| "        | 2  | ... | 38.5            | 38.4   | 38.8   | 52     | 64   | 16           | 14   | "                      | Turbid  | ...     | 1,046      | "        | ...           | Nil.   | "      |
| "        | 3  | ... | 36.8            | 38.4   | 38.4   | 60     | 68   | 12           | 16   | "                      | Clear   | ...     | 1,031      | "        | ...           | "      | "      |
| "        | 4  | ... | 37.4            | 38.8   | 39.4   | 64     | 64   | 16           | 16   | "                      | "       | ...     | 1,030      | "        | ...           | "      | "      |
| "        | 5  | ... | 38.2            | 39.0   | 39.3   | 58     | 56   | 16           | 16   | "                      | Turbid  | ...     | 1,032      | "        | ...           | 1/30   | "      |
| "        | 6  | ... | 38.3            | 38.4   | 39.3   | 60     | 64   | 16           | 16   | "                      | Clear   | ...     | 1,016      | "        | ...           | Nil.   | "      |
| "        | 7  | ... | 37.8            | 38.1   | 39.3   | 60     | 68   | 16           | 20   | "                      | "       | ...     | 1,040      | "        | ...           | 1/80   | "      |
| "        | 8  | ... | 38.5            | 38.6   | 39.4   | 68     | 52   | 16           | 16   | "                      | "       | ...     | 1,036      | "        | ...           | 1/70   | "      |
| "        | 9  | ... | 38.6            | 38.8   | 39.0   | 72     | 76   | 16           | 16   | "                      | Turbid  | ...     | 1,044      | "        | ...           | Nil.   | "      |
| "        | 10 | ... | 38.6            | 39.0   | 39.0   | 52     | 64   | 16           | 16   | "                      | Clear   | ...     | 1,026      | "        | ...           | 1/80   | "      |
| "        | 11 | ... | 37.5            | 38.2   | 39.2   | 56     | 56   | 16           | 16   | "                      | "       | ...     | 1,020      | "        | ...           | 1/63   | "      |
| "        | 12 | ... | 37.5            | 38.5   | 38.5   | 52     | 54   | 16           | 16   | "                      | "       | ...     | 1,036      | "        | ...           | 1/70   | "      |
| "        | 13 | ... | 38.1            | 38.4   | 39.4   | 60     | 64   | 12           | 16   | "                      | "       | ...     | 1,027      | "        | ...           | 1/70   | "      |
| "        | 14 | ... | 37.6            | 38.3   | 39.3   | 64     | 64   | 12           | 12   | "                      | Turbid  | ...     | 1,042      | "        | ...           | 1/72   | "      |
| "        | 15 | ... | 37.6            | 38.5   | 39.0   | 64     | 72   | 12           | 16   | "                      | Clear   | ...     | 1,026      | "        | ...           | Nil.   | "      |
| "        | 16 | ... | 37.4            | 38.3   | 39.3   | 56     | 64   | 12           | 16   | "                      | "       | ...     | 1,018      | "        | ...           | "      | "      |
| "        | 17 | ... | 37.3            | 38.4   | 39.0   | 64     | 64   | 12           | 16   | "                      | "       | ...     | 1,032      | "        | ...           | "      | "      |
| "        | 18 | ... | 38.1            | 38.4   | 38.8   | 64     | 60   | 16           | 12   | "                      | "       | ...     | 1,032      | "        | ...           | 1/70   | "      |
| "        | 19 | ... | 37.7            | 38.6   | 38.4   | 56     | 60   | 12           | 12   | "                      | Turbid  | ...     | 1,032      | "        | ...           | Nil.   | "      |
| "        | 20 | ... | 37.0            | 38.2   | 39.2   | 56     | 64   | 12           | 16   | "                      | Clear   | ...     | 1,018      | "        | ...           | 1/55   | "      |
| "        | 21 | ... | 37.8            | 38.5   | 39.4   | 64     | 64   | 16           | 16   | "                      | "       | ...     | 1,022      | "        | ...           | 1/47   | "      |
| "        | 22 | ... | 37.8            | 38.8   | 39.0   | 56     | 64   | 12           | 12   | "                      | Turbid  | ...     | 1,046      | "        | ...           | 1/36   | "      |
| "        | 23 | ... | 38.0            | 38.1   | 39.0   | 52     | 56   | 16           | 12   | "                      | "       | ...     | 1,024      | "        | ...           | Trace. | "      |
| "        | 24 | ... | 37.6            | 38.3   | 39.3   | 56     | 76   | 12           | 16   | "                      | Clear   | ...     | 1,028      | "        | ...           | 1/85   | "      |
| "        | 25 | ... | 38.0            | 38.5   | 38.6   | 40     | 72   | 12           | 16   | "                      | "       | ...     | 1,020      | "        | ...           | Trace. | "      |
| "        | 26 | ... | 37.2            | 38.0   | 39.0   | 60     | 64   | 12           | 16   | "                      | "       | ...     | 1,020      | "        | ...           | Nil.   | "      |
| "        | 27 | ... | 37.5            | 38.2   | 39.0   | 64     | 64   | 12           | 16   | "                      | "       | ...     | 1,024      | "        | ...           | "      | "      |
| "        | 28 | ... | 37.6            | 38.6   | 39.0   | 60     | 56   | 12           | 12   | "                      | Turbid  | ...     | 1,032      | "        | ...           | "      | "      |
| "        | 29 | ... | 37.4            | 38.4   | 38.4   | 60     | 64   | 12           | 16   | "                      | "       | ...     | 1,054      | "        | ...           | 1/40   | "      |
| "        | 30 | ... | 37.0            | 38.0   | 38.8   | 60     | 60   | 16           | 12   | "                      | Clear   | ...     | 1,042      | "        | ...           | 1/45   | Trace. |
| "        | 31 | ... | 37.2            | 38.4   | 39.0   | 56     | 60   | 12           | 16   | "                      | Turbid  | ...     | 1,020      | "        | ...           | 1/45   | Nil.   |
| February | 1  | ... | 37.0            | 38.2   | 39.0   | 56     | 64   | 12           | 16   | "                      | "       | ...     | 1,050      | "        | ...           | 1/54   | "      |
| "        | 2  | ... | 37.6            | 37.8   | 38.6   | 60     | 60   | 12           | 12   | "                      | Clear   | ...     | 1,042      | "        | ...           | 1/30   | "      |
| "        | 3  | ... | 37.0            | 38.3   | 39.0   | 56     | 64   | 12           | 16   | "                      | Turbid  | ...     | 1,040      | "        | ...           | 1/40   | Trace. |
| "        | 4  | ... | 38.2            | 38.4   | 39.4   | 60     | 60   | 12           | 16   | "                      | "       | ...     | 1,036      | "        | ...           | Trace. | Nil.   |
| "        | 5  | ... | 37.5            | 38.2   | 39.2   | 48     | 64   | 16           | 16   | "                      | "       | ...     | 1,058      | "        | ...           | 1/23   | "      |
| "        | 6  | ... | 37.0            | 38.0   | 39.2   | 48     | 64   | 12           | 12   | "                      | "       | ...     | 1,020      | "        | ...           | Trace. | "      |
| "        | 7  | ... | 37.8            | 38.2   | 38.8   | 60     | 64   | 16           | 12   | "                      | "       | ...     | 1,029      | "        | ...           | "      | "      |
| "        | 8  | ... | 37.2            | 37.8   | 38.6   | 52     | 64   | 12           | 12   | "                      | "       | ...     | 1,029      | "        | ...           | Nil.   | "      |
| "        | 9  | ... | 36.4            | 38.1   | 38.8   | 56     | 64   | 8            | 12   | "                      | "       | ...     | 1,040      | "        | ...           | 1/55   | "      |

This animal was subcutaneously inoculated at 5-30 P.M. with 1.0 c.c. of blood, containing numerous hæmatozoa drawn from the jugular vein of horse No. LXXXIV immediately after death.

" 10 ... 36.8 | 38.4 | 39.2 | 60 | 64 | 16 | 16 | Absent. | Turbid ... | 1,040 | Alkaline ... | Trace ... | Nil.

Nothing is to be seen or felt at the seat of inoculation.

|      |     |      |      |      |    |    |    |    |         |        |     |       |   |     |        |   |
|------|-----|------|------|------|----|----|----|----|---------|--------|-----|-------|---|-----|--------|---|
| " 11 | ... | 38.4 | 38.4 | 39.4 | 60 | 64 | 12 | 16 | Absent. | Turbid | ... | 1,036 | " | ... | "      | " |
| " 12 | ... | 37.8 | 38.8 | 39.4 | 52 | 64 | 16 | 12 | "       | "      | ... | 1,020 | " | ... | Nil.   | " |
| " 13 | ... | 39.4 | 39.8 | 40.8 | 60 | 72 | 12 | 16 | Few.    | "      | ... | 1,028 | " | ... | 1/80   | " |
| " 14 | ... | 39.4 | 40.1 | 40.8 | 64 | 64 | 16 | 16 | "       | "      | ... | 1,026 | " | ... | 1/80   | " |
| " 15 | ... | 39.1 | 39.1 | 40.4 | 64 | 76 | 12 | 20 | Absent. | Clear  | ... | 1,028 | " | ... | 1/44   | " |
| " 16 | ... | 38.4 | 38.5 | 39.3 | 68 | 72 | 16 | 20 | "       | Turbid | ... | 1,054 | " | ... | 1/60   | " |
| " 17 | ... | 38.2 | 39.2 | 39.7 | 64 | 72 | 24 | 16 | "       | "      | ... | 1,036 | " | ... | Nil.   | " |
| " 18 | ... | 38.1 | 39.1 | 39.5 | 60 | 80 | 16 | 16 | Few.    | "      | ... | 1,050 | " | ... | 1/80   | " |
| " 19 | ... | 37.2 | 38.5 | 39.5 | 56 | 60 | 8  | 12 | Absent. | "      | ... | 1,028 | " | ... | Trace. | " |
| " 20 | ... | 38.8 | 38.8 | 39.0 | 64 | 72 | 20 | 12 | "       | Clear  | ... | 1,026 | " | ... | 1/80   | " |
| " 21 | ... | 38.1 | 38.8 | 39.3 | 60 | 68 | 12 | 12 | "       | Turbid | ... | 1,014 | " | ... | Trace. | " |
| " 22 | ... | 38.2 | 38.6 | 39.1 | 60 | 64 | 16 | 16 | "       | "      | ... | 1,022 | " | ... | Nil.   | " |
| " 23 | ... | 38.2 | 38.5 | 39.8 | 60 | 64 | 20 | 16 | "       | "      | ... | 1,028 | " | ... | Trace. | " |



| Date.    |    | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |            |          |               |        |        |
|----------|----|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|------------|----------|---------------|--------|--------|
|          |    | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Re-action. | Albumen. | Hip.<br>Acid. |        |        |
| 1893.    |    |                 |        |        |        |      |              |      |                        |         |         |            |          |               |        |        |
| February | 24 | ...             | 38.3   | 39.6   | 39.6   | 76   | 64           | 20   | 12                     | Absent. | Turbid  | ...        | 1,032    | Alkaline...   | Trace. | Nil.   |
| "        | 25 | ...             | 38.4   | 38.6   | 39.5   | 72   | 64           | 16   | 20                     | "       | Clear   | ...        | 1,030    | "             | 1/70   | "      |
| "        | 26 | ...             | 38.4   | 38.7   | 39.4   | 64   | 68           | 12   | 16                     | "       | Turbid  | ...        | 1,042    | "             | 1/64   | "      |
| "        | 27 | ...             | 38.7   | 38.5   | 39.7   | 64   | 72           | 16   | 20                     | "       | Clear   | ...        | 1,044    | "             | 1/63   | "      |
| "        | 28 | ..              | 37.4   | 38.5   | 39.1   | 64   | 68           | 12   | 16                     | "       | Turbid  | ...        | 1,028    | "             | 1/60   | "      |
| March    | 1  | ..              | 38.4   | 39.0   | 39.5   | 52   | 56           | 12   | 16                     | "       | "       | ...        | 1,052    | "             | Nil    | "      |
| "        | 2  | ...             | 38.7   | 38.5   | 39.5   | 52   | 72           | 12   | 16                     | "       | "       | ...        | 1,038    | "             | 1/62   | "      |
| "        | 3  | ...             | 38.0   | 38.6   | 39.8   | 56   | 64           | 12   | 20                     | "       | Clear   | ...        | 1,026    | "             | Trace  | "      |
| "        | 4  | ...             | 37.8   | 38.6   | 39.7   | 60   | 64           | 12   | 20                     | "       | Turbid  | ...        | 1,026    | "             | Nil    | "      |
| "        | 5  | ..              | 38.2   | 38.3   | 39.4   | 56   | 64           | 16   | 12                     | "       | "       | ...        | 1,026    | Neutral       | "      | "      |
| "        | 6  | ...             | 38.4   | 38.8   | 39.4   | 56   | 60           | 16   | 16                     | "       | "       | ...        | 1,026    | Alkaline...   | "      | "      |
| "        | 7  | ...             | 38.1   | 38.5   | 40.1   | 52   | 64           | 12   | 16                     | "       | Clear   | ...        | 1,030    | "             | Trace  | "      |
| "        | 8  | ...             | 37.8   | 38.8   | 39.8   | 52   | 60           | 12   | 16                     | "       | "       | ...        | 1,054    | "             | Nil    | "      |
| "        | 9  | ...             | 38.4   | 39.0   | 39.5   | 56   | 60           | 12   | 11                     | "       | "       | ...        | 1,024    | "             | 1/64   | "      |
| "        | 10 | ...             | 37.8   | 38.6   | 39.2   | 52   | 68           | 16   | 12                     | "       | Turbid  | ...        | 1,044    | "             | Trace  | "      |
| "        | 11 | ...             | 37.1   | 38.4   | 39.4   | 44   | 60           | 12   | 16                     | "       | Clear   | ...        | 1,022    | "             | "      | "      |
| "        | 12 | ...             | 37.6   | 39.2   | 40.2   | 56   | 68           | 12   | 20                     | "       | "       | ...        | 1,028    | "             | 1/64   | "      |
| "        | 13 | ...             | 37.5   | 38.6   | 39.6   | 52   | 60           | 12   | 12                     | "       | Turbid  | ...        | 1,044    | "             | Trace. | "      |
| "        | 14 | ...             | 38.3   | 38.6   | 39.6   | 48   | 68           | 16   | 16                     | "       | Clear   | ...        | 1,026    | "             | Nil.   | "      |
| "        | 15 | ...             | 38.0   | 38.5   | 38.4   | 56   | 60           | 12   | 16                     | "       | "       | ...        | 1,024    | "             | "      | "      |
| "        | 16 | ...             | 37.7   | 38.2   | 39.5   | 52   | 56           | 12   | 20                     | "       | "       | ...        | 1,022    | "             | "      | "      |
| "        | 17 | ...             | 38.0   | 38.6   | 40.1   | 52   | 60           | 16   | 16                     | "       | Turbid  | ...        | 1,022    | "             | Trace. | Trace. |
| "        | 18 | ...             | 37.7   | 38.4   | 39.5   | 52   | 60           | 12   | 12                     | "       | Clear   | ...        | 1,016    | Neutral       | "      | "      |
| "        | 19 | ...             | 37.6   | 38.6   | 39.6   | 60   | 60           | 12   | 16                     | "       | "       | ...        | 1,020    | Alkaline...   | "      | "      |
| "        | 20 | ...             | 37.2   | 38.5   | 39.4   | 52   | 60           | 12   | 16                     | "       | "       | ...        | 1,022    | Neutral       | 1/64   | "      |
| "        | 21 | ...             | 37.1   | 37.6   | 39.1   | 48   | 52           | 12   | 12                     | "       | "       | ...        | 1,030    | "             | Trace. | "      |
| "        | 22 | ..              | 37.4   | 37.8   | 39.1   | 48   | 60           | 12   | 12                     | "       | "       | ...        | 1,018    | Alkaline...   | "      | "      |
| "        | 23 | ...             | 36.7   | 38.5   | 39.2   | 40   | 60           | 12   | 16                     | "       | "       | ...        | 1,048    | "             | "      | "      |
| "        | 24 | ...             | 36.8   | 37.8   | 39.6   | 44   | 68           | 12   | 16                     | "       | "       | ...        | 1,033    | Neutral       | "      | "      |
| "        | 25 | ...             | 38.0   | 38.8   | 39.5   | 48   | 64           | 16   | 12                     | "       | "       | ...        | 1,016    | Alkaline      | Nil.   | Nil.   |
| "        | 26 | ...             | 37.7   | 38.5   | 38.8   | 60   | 68           | 12   | 20                     | "       | "       | ...        | 1,018    | "             | "      | "      |
| "        | 27 | ...             | 37.8   | 38.8   | 40.1   | 48   | 60           | 14   | 16                     | "       | Turbid  | ...        | 1,048    | "             | "      | "      |
| "        | 28 | ...             | 38.2   | 38.9   | 39.8   | 56   | 76           | 16   | 24                     | "       | Clear   | ...        | 1,034    | Acid          | "      | "      |
| "        | 29 | ...             | 38.3   | 39.2   | 40.6   | 52   | 80           | 16   | 44                     | "       | "       | ...        | 1,038    | Alkaline...   | "      | "      |
| "        | 30 | ...             | 38.2   | 39.0   | 40.2   | 52   | 80           | 12   | 56                     | "       | Turbid  | ...        | 1,043    | "             | 1/64   | "      |
| "        | 31 | ...             | 38.3   | 39.3   | 40.0   | 56   | 68           | 16   | 32                     | "       | "       | ...        | 1,036    | Neutral       | Trace. | "      |
| April    | 1  | ..              | 39.4   | 40.0   | 40.2   | 52   | 88           | 32   | 52                     | "       | "       | ...        | 1,044    | Alkaline...   | Nil.   | "      |
| "        | 2  | ...             | 39.0   | 39.4   | 39.4   | 56   | 64           | 20   | 32                     | "       | Clear   | ...        | 1,024    | "             | "      | "      |
| "        | 3  | ...             | 38.4   | 39.2   | 39.5   | 56   | 76           | 24   | 36                     | "       | "       | ...        | 1,032    | "             | "      | "      |
| "        | 4  | ...             | 38.5   | 39.2   | 39.8   | 64   | 72           | 16   | 32                     | "       | Turbid  | ...        | 1,042    | "             | "      | "      |
| "        | 5  | ...             | 38.4   | 39.5   | 39.7   | 56   | 76           | 24   | 60                     | "       | Clear   | ...        | 1,030    | "             | "      | "      |
| "        | 6  | ...             | 38.2   | 39.2   | 40.0   | 52   | 80           | 16   | 56                     | "       | Turbid  | ...        | 1,018    | "             | "      | "      |
| "        | 7  | ...             | 37.8   | 38.8   | 39.7   | 60   | 76           | 24   | 32                     | "       | "       | ...        | 1,042    | "             | "      | "      |
| "        | 8  | ...             | 37.8   | 39.0   | 39.8   | 56   | 64           | 12   | 28                     | "       | "       | ...        | 1,028    | "             | "      | "      |
| "        | 9  | ...             | 37.7   | 38.4   | 40.2   | 52   | 72           | 16   | 24                     | "       | Clear   | ...        | 1,052    | "             | "      | "      |
| "        | 10 | ...             | 38.6   | 39.4   | 40.1   | 56   | 76           | 16   | 56                     | "       | "       | ...        | 1,042    | "             | "      | "      |
| "        | 11 | ...             | 37.8   | 39.0   | 39.1   | 48   | 52           | 12   | 24                     | "       | Turbid  | ...        | 1,040    | "             | "      | "      |
| "        | 12 | ...             | 38.4   | 39.1   | 38.6   | 64   | 52           | 20   | 16                     | "       | "       | ...        | 1,024    | "             | "      | "      |
| "        | 13 | ...             | 38.2   | 38.2   | 39.2   | 52   | 56           | 12   | 24                     | "       | "       | ...        | 1,030    | "             | "      | "      |
| "        | 14 | ...             | 38.2   | 39.4   | 39.5   | 48   | 60           | 12   | 20                     | "       | "       | ...        | 1,016    | "             | "      | "      |
| "        | 15 | ...             | 38.1   | 38.7   | 39.0   | 60   | 64           | 20   | 12                     | "       | Clear   | ...        | 1,022    | "             | "      | "      |
| "        | 16 | ...             | 37.7   | 38.6   | 39.3   | 48   | 64           | 16   | 16                     | "       | Turbid  | ...        | 1,030    | "             | "      | "      |
| "        | 17 | ...             | 38.6   | 39.6   | 40.4   | 52   | 68           | 22   | 48                     | "       | Clear   | ...        | 1,020    | "             | "      | "      |
| "        | 18 | ...             | 38.2   | 39.1   | 39.7   | 64   | 80           | 20   | 60                     | "       | "       | ...        | 1,011    | "             | "      | "      |
| "        | 19 | ..              | 37.8   | 38.8   | 40.0   | 52   | 81           | 24   | 64                     | "       | "       | ...        | 1,020    | "             | "      | "      |
| "        | 20 | ..              | 38.1   | 38.8   | 39.4   | 64   | 76           | 24   | 44                     | "       | Turbid  | ...        | 1,028    | "             | "      | "      |
| "        | 21 | ...             | 38.1   | 38.8   | 39.6   | 56   | 76           | 20   | 48                     | "       | Clear   | ...        | 1,022    | "             | "      | "      |
| "        | 22 | ...             | 38.0   | 38.7   | 39.5   | 56   | 76           | 16   | 28                     | "       | "       | ...        | 1,025    | "             | "      | "      |
| "        | 23 | ...             | 38.0   | 38.4   | 40.3   | 56   | 76           | 16   | 24                     | "       | "       | ...        | 1,030    | "             | "      | "      |
| "        | 24 | ...             | 37.8   | 38.6   | 39.3   | 52   | 56           | 16   | 16                     | "       | Turbid  | ...        | 1,026    | "             | "      | "      |
| "        | 25 | ...             | 37.6   | 38.8   | 38.4   | 52   | 44           | 16   | 13                     | "       | Clear   | ...        | 1,022    | "             | "      | "      |
| "        | 26 | ...             | 38.0   | 38.4   | 39.4   | 52   | 69           | 12   | 16                     | "       | Turbid  | ...        | 1,032    | "             | "      | "      |
| "        | 27 | ...             | 37.4   | 38.8   | 39.7   | 52   | 64           | 12   | 34                     | "       | Clear   | ...        | 1,010    | "             | "      | "      |
| "        | 28 | ...             | 37.6   | 38.6   | 39.7   | 52   | 60           | 12   | 22                     | "       | Turbid  | ...        | 1,010    | "             | "      | "      |
| "        | 29 | ...             | 37.8   | 38.1   | 39.3   | 48   | 56           | 12   | 18                     | "       | Clear   | ...        | 1,024    | "             | "      | "      |
| "        | 30 | ...             | 37.2   | 38.7   | 39.3   | 56   | 62           | 12   | 28                     | "       | "       | ...        | 1,017    | "             | "      | "      |

| Date.  | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Urine.  |         |           |             |               |
|--------|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|-----------|-------------|---------------|
|        | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        | Colour. | Sp. Gr. | Reaction. | Albumen.    | Hip.<br>Acid. |
| 1893.  |                 |        |        |        |      |              |      |                        |         |         |           |             |               |
| May 1  | ...             | 37.5   | 38.0   | 39.3   | 52   | 64           | 12   | 30                     | Absent. | Clear   | 1,012     | Alkaline... | Nil.          |
| " 2    | ...             | 37.2   | 38.4   | 39.1   | 48   | 56           | 12   | 20                     | "       | "       | 1,023     | "           | "             |
| " 3    | ...             | 37.7   | 38.5   | 39.0   | 36   | 60           | 12   | 28                     | "       | Turbid  | 1,018     | "           | "             |
| " 4    | ...             | 38.0   | 39.1   | 39.2   | 40   | 68           | 12   | 40                     | "       | Clear   | 1,012     | "           | Trace.        |
| " 5    | ...             | 38.0   | 38.9   | 39.4   | 48   | 68           | 12   | 40                     | "       | "       | 1,021     | "           | "             |
| " 6    | ...             | 37.0   | 38.0   | 39.3   | 48   | 68           | 20   | 32                     | "       | "       | 1,024     | "           | "             |
| " 7    | ...             | 39.8   | 39.0   | 40.2   | 56   | 64           | 16   | 20                     | "       | "       | 1,010     | "           | Nil.          |
| " 8    | ...             | 38.1   | 38.6   | 39.6   | 60   | 72           | 20   | 48                     | "       | Turbid  | 1,008     | "           | "             |
| " 9    | ...             | 37.0   | 38.4   | 39.4   | 60   | 80           | 20   | 60                     | "       | "       | 1,030     | "           | Trace.        |
| " 10   | ...             | 37.0   | 38.3   | 39.3   | 56   | 80           | 16   | 48                     | "       | Clear   | 1,026     | "           | 1/12          |
| " 11   | ...             | 37.8   | 38.8   | 39.1   | 52   | 64           | 12   | 24                     | "       | Turbid  | 1,018     | "           | Nil.          |
| " 12   | ...             | 37.8   | 38.3   | 39.6   | 60   | 88           | 20   | 60                     | "       | "       | 1,020     | "           | "             |
| " 13   | ...             | 38.2   | 38.4   | 40.0   | 60   | 76           | 16   | 32                     | "       | Clear   | 1,026     | "           | Trace.        |
| " 14   | ...             | 38.2   | 38.6   | 40.3   | 64   | 76           | 20   | 32                     | "       | Turbid  | 1,029     | "           | 1/10          |
| " 15   | ...             | 38.7   | 38.9   | 39.4   | 64   | 72           | 20   | 56                     | "       | Clear   | 1,037     | "           | Nil.          |
| " 16   | ...             | 38.2   | 38.6   | 39.4   | 60   | 76           | 16   | 48                     | "       | Turbid  | 1,020     | "           | Trace.        |
| " 17   | ...             | 37.7   | 38.8   | 39.3   | 60   | 64           | 20   | 40                     | "       | "       | 1,026     | "           | "             |
| " 18   | ...             | 38.3   | 39.0   | 39.7   | 68   | 88           | 16   | 48                     | "       | Clear   | 1,016     | "           | "             |
| " 19   | ...             | 38.3   | 38.6   | 39.1   | 60   | 52           | 20   | 28                     | "       | "       | 1,022     | "           | Nil.          |
| " 20   | ...             | 37.7   | 38.6   | 39.4   | 52   | 68           | 20   | 40                     | "       | "       | 1,024     | "           | "             |
| " 21   | ...             | 38.5   | 39.1   | 39.7   | 64   | 76           | 20   | 24                     | "       | "       | 1,031     | "           | Trace.        |
| " 22   | ...             | 38.1   | 39.1   | 39.4   | 64   | 76           | 24   | 24                     | "       | "       | 1,038     | "           | "             |
| " 23   | ...             | 37.6   | 38.7   | 39.4   | 60   | 72           | 20   | 32                     | "       | "       | 1,020     | "           | Nil.          |
| " 24   | ...             | 38.0   | 38.7   | 39.1   | 64   | 76           | 24   | 24                     | "       | Turbid  | 1,042     | "           | "             |
| " 25   | ...             | 37.6   | 39.0   | 39.7   | 68   | 88           | 20   | 52                     | "       | Clear   | 1,036     | "           | Trace.        |
| " 26   | ...             | 39.7   | 40.8   | 39.1   | 64   | 76           | 16   | 28                     | "       | "       | 1,038     | "           | 1/16          |
| " 27   | ...             | 41.0   | 41.1   | 39.6   | 84   | 60           | 40   | 16                     | "       | Turbid  | 1,024     | "           | Trace.        |
| " 28   | ...             | 38.8   | 38.7   | 37.6   | 64   | 72           | 24   | 16                     | "       | Clear   | 1,012     | "           | Nil.          |
| " 29   | ...             | 38.4   | 38.6   | 38.4   | 68   | 68           | 16   | 16                     | "       | Turbid  | 1,050     | Neutral ... | 1/8           |
| " 30   | ...             | 38.2   | 38.2   | 38.9   | 60   | 80           | 12   | 24                     | "       | "       | 1,042     | Alkaline... | Trace.        |
| " 31   | ...             | 38.0   | 38.7   | 39.2   | 60   | 72           | 16   | 20                     | "       | "       | 1,044     | "           | 1/12          |
| June 1 | ...             | 38.1   | 38.6   | 39.3   | 64   | 60           | 20   | 20                     | "       | "       | 1,028     | Neutral ... | Trace.        |
| " 2    | ...             | 37.7   | 39.0   | 39.4   | 64   | 84           | 24   | 28                     | "       | "       | 1,030     | Alkaline... | "             |
| " 3    | ...             | 38.4   | 39.1   | 39.2   | 64   | 64           | 20   | 20                     | "       | Clear   | 1,052     | "           | 1/8           |
| " 4    | ...             | 38.1   | 38.3   | 39.3   | 64   | 72           | 36   | 20                     | "       | "       | 1,042     | "           | Trace.        |
| " 5    | ...             | 37.8   | 38.8   | 38.6   | 64   | 88           | 20   | 32                     | "       | "       | 1,018     | "           | "             |
| " 6    | ...             | 38.1   | 39.1   | 39.3   | 64   | 84           | 20   | 24                     | "       | "       | 1,031     | "           | "             |
| " 7    | ...             | 38.3   | 39.2   | 38.2   | 60   | 72           | 32   | 16                     | "       | "       | 1,036     | "           | 1/12          |
| " 8    | ...             | 39.2   | 39.5   | 40.3   | 52   | 72           | 16   | 24                     | "       | "       | 1,032     | Neutral ... | Nil.          |
| " 9    | ...             | 39.8   | 38.8   | 39.2   | 68   | 84           | 16   | 20                     | "       | "       | 1,014     | Alkaline... | "             |
| " 10   | ...             | 38.1   | 38.6   | 39.6   | 60   | 68           | 20   | 16                     | "       | Turbid  | 1,021     | "           | "             |
| " 11   | ...             | 38.3   | 38.6   | 38.8   | 52   | 68           | 24   | 16                     | "       | Clear   | 1,032     | "           | 1/10          |
| " 12   | ...             | 38.4   | 38.7   | 39.5   | 64   | 68           | 28   | 28                     | "       | "       | 1,042     | "           | 1/8           |
| " 13   | ...             | 38.3   | 38.8   | 39.4   | 60   | 68           | 20   | 16                     | "       | "       | 1,024     | Acid ...    | 1/16          |
| " 14   | ...             | 38.0   | 38.8   | 39.4   | 56   | 72           | 16   | 28                     | "       | "       | 1,030     | Alkaline... | Trace.        |
| " 15   | ...             | 37.7   | 39.1   | 39.6   | 52   | 72           | 12   | 16                     | "       | Turbid  | 1,024     | "           | "             |
| " 16   | ...             | 38.2   | 37.2   | 40.0   | 64   | 56           | 16   | 20                     | "       | Clear   | 1,032     | "           | "             |
| " 17   | ...             | 39.3   | 39.2   | 38.8   | 56   | 64           | 16   | 20                     | "       | "       | 1,030     | "           | "             |
| " 18   | ...             | 37.4   | 37.8   | 38.7   | 56   | 68           | 12   | 16                     | "       | "       | 1,073     | "           | Nil.          |
| " 19   | ...             | 37.9   | 37.2   | 37.6   | 60   | 68           | 12   | 20                     | "       | "       | 1,016     | Acid ...    | "             |
| " 20   | ...             | 37.0   | 37.6   | 38.4   | 60   | 76           | 20   | 12                     | "       | Turbid  | 1,040     | Alkaline... | 1/6           |
| " 21   | ...             | 38.0   | 38.2   | 38.7   | 60   | 64           | 12   | 20                     | "       | Clear   | 1,024     | "           | Nil.          |
| " 22   | ...             | 37.7   | 38.4   | 38.6   | 76   | 64           | 16   | 16                     | "       | "       | 1,018     | "           | "             |
| " 23   | ...             | 39.2   | 39.0   | 38.4   | 72   | 68           | 20   | 12                     | "       | "       | 1,024     | "           | Trace.        |
| " 24   | ...             | 37.6   | 38.3   | 38.0   | 68   | 68           | 12   | 16                     | "       | "       | 1,024     | "           | Nil.          |
| " 25   | ...             | 37.2   | 38.2   | 38.6   | 64   | 68           | 20   | 20                     | "       | "       | 1,032     | "           | Trace.        |
| " 26   | ...             | 37.0   | 37.7   | 37.6   | 52   | 64           | 12   | 16                     | "       | Turbid  | 1,036     | "           | "             |
| " 27   | ...             | 36.8   | 39.4   | 39.4   | 56   | 92           | 16   | 16                     | "       | "       | 1,016     | "           | "             |
| " 28   | ...             | 35.7   | 39.3   | 39.4   | 92   | 80           | 16   | 16                     | "       | Clear   | 1,038     | "           | Nil.          |
| " 29   | ...             | 37.6   | 38.2   | 38.8   | 64   | 64           | 16   | 16                     | "       | "       | 1,030     | "           | "             |
| " 30   | ...             | 38.3   | 38.8   | 38.8   | 64   | 72           | 16   | 16                     | "       | "       | 1,024     | "           | "             |
| July 1 | ...             | 37.9   | 38.0   | 38.6   | 56   | 68           | 12   | 24                     | "       | "       | 1,010     | "           | "             |
| " 2    | ...             | 38.1   | 38.2   | 38.5   | 64   | 64           | 16   | 20                     | "       | "       | 1,014     | "           | "             |
| " 3    | ...             | 37.4   | 37.7   | 38.3   | 48   | 60           | 16   | 16                     | "       | Turbid  | 1,010     | "           | "             |
| " 4    | ...             | 37.2   | 37.2   | 37.6   | 48   | 68           | 12   | 16                     | "       | Clear   | 1,040     | "           | 1/8           |
| " 5    | ...             | 37.8   | 38.4   | 38.2   | 52   | 64           | 16   | 16                     | "       | "       | 1,034     | "           | Trace.        |
| " 6    | ...             | 37.5   | 38.2   | 37.2   | 52   | 60           | 16   | 12                     | "       | "       | 1,032     | "           | "             |
| " 7    | ...             | 37.8   | 38.2   | 37.6   | 60   | 48           | 12   | 16                     | "       | "       | 1,022     | "           | Nil.          |
| " 8    | ...             | 37.2   | 37.7   | 39.0   | 48   | 52           | 12   | 12                     | "       | "       | 1,020     | "           | Trace.        |



| Date.  |    |     | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Colour. | Urine.  |             |          |                   |
|--------|----|-----|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|-------------|----------|-------------------|
|        |    |     | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        |         | Sp. Gr. | Reaction.   | Albumen. | Hippuric<br>Acid. |
| 1893.  |    |     |                 |        |        |        |      |              |      |                        |         |         |             |          |                   |
| July   | 9  | ... | 38.4            | 38.8   | 39.2   | 48     | 52   | 12           | 12   | Absent.                | Turbid  | 1,022   | Alkaline... | Nil.     | Nil               |
| "      | 10 | ... | 38.6            | 40.0   | 40.2   | 60     | 76   | 12           | 16   | "                      | Clear   | 1,030   | Neutral ... | "        | 1/8               |
| "      | 11 | ... | 38.4            | 38.4   | 39.7   | 60     | 68   | 16           | 16   | "                      | "       | 1,014   | Alkaline... | "        | Nil               |
| "      | 12 | ... | 37.2            | 37.6   | 37.6   | 56     | 60   | 12           | 16   | "                      | "       | 1,038   | "           | "        | "                 |
| "      | 13 | ... | 37.2            | 38.2   | 38.1   | 52     | 64   | 16           | 16   | "                      | "       | 1,032   | "           | "        | 1/16              |
| "      | 14 | ... | 37.8            | 37.9   | 38.6   | 48     | 60   | 16           | 12   | "                      | "       | 1,022   | "           | "        | 1/10              |
| "      | 15 | ... | 37.6            | 38.0   | 38.2   | 60     | 56   | 12           | 16   | "                      | "       | 1,026   | "           | "        | Trace.            |
| "      | 16 | ... | 37.8            | 38.5   | 38.6   | 52     | 64   | 12           | 16   | "                      | "       | 1,018   | "           | "        | 1/12              |
| "      | 17 | ... | 38.0            | 38.2   | 38.6   | 56     | 60   | 16           | 12   | "                      | "       | 1,018   | "           | Trace.   | Nil               |
| "      | 18 | ... | 37.6            | 38.4   | 39.6   | 52     | 60   | 16           | 12   | "                      | Turbid  | 1,032   | "           | Nil.     | Trace.            |
| "      | 19 | ... | 38.0            | 39.4   | 40.2   | 52     | 64   | 16           | 16   | "                      | "       | 1,032   | "           | Trace.   | Nil               |
| "      | 20 | ... | 38.2            | 38.0   | 38.4   | 60     | 60   | 16           | 12   | "                      | Clear   | 1,022   | "           | Nil.     | Trace.            |
| "      | 21 | ... | 37.6            | 38.0   | 38.3   | 63     | 46   | 16           | 18   | "                      | "       | 1,024   | "           | Trace.   | "                 |
| "      | 22 | ... | 39.0            | 39.0   | 39.3   | 56     | 60   | 16           | 16   | "                      | Turbid  | 1,028   | "           | "        | Nil               |
| "      | 23 | ... | 37.8            | 38.6   | 38.6   | 52     | 68   | 16           | 28   | "                      | Clear   | 1,010   | "           | "        | "                 |
| "      | 24 | ... | 37.6            | 38.7   | 39.2   | 52     | 56   | 20           | 12   | "                      | Turbid  | 1,023   | "           | "        | "                 |
| "      | 25 | ... | 38.6            | 39.4   | 39.4   | 52     | 60   | 16           | 12   | "                      | Clear.  | 1,016   | "           | Nil.     | "                 |
| "      | 26 | ... | 38.8            | 39.0   | 39.4   | 80     | 68   | 32           | 28   | "                      | Turbid  | 1,014   | "           | "        | Trace.            |
| "      | 27 | ... | 38.4            | 39.0   | 38.8   | 52     | 60   | 20           | 16   | "                      | "       | 1,020   | "           | "        | "                 |
| "      | 28 | ... | 38.0            | 38.8   | 38.6   | 64     | 72   | 16           | 16   | "                      | Clear   | 1,026   | "           | "        | Nil.              |
| "      | 29 | ... | 38.0            | 38.2   | 39.4   | 56     | 68   | 20           | 16   | "                      | "       | 1,022   | "           | Trace.   | "                 |
| "      | 30 | ... | 38.3            | 38.6   | 39.0   | 64     | 64   | 20           | 20   | "                      | "       | 1,020   | "           | Nil.     | "                 |
| "      | 31 | ... | 38.2            | 38.6   | 38.8   | 60     | 68   | 16           | 20   | "                      | "       | 1,030   | "           | "        | "                 |
| August | 1  | ... | 38.2            | 38.4   | 38.8   | 52     | 72   | 16           | 20   | "                      | "       | 1,034   | "           | "        | "                 |
| "      | 2  | ... | 38.4            | 38.4   | 38.8   | 56     | 56   | 12           | 16   | "                      | "       | 1,030   | "           | "        | "                 |
| "      | 3  | ... | 38.4            | 38.6   | 38.5   | 60     | 65   | 12           | 14   | "                      | "       | 1,026   | "           | "        | "                 |
| "      | 4  | ... | 37.7            | 38.3   | 38.4   | 52     | 72   | 12           | 16   | "                      | Turbid  | 1,036   | "           | "        | "                 |
| "      | 5  | ... | 38.2            | 38.6   | 38.8   | 60     | 68   | 16           | 20   | "                      | Clear   | 1,026   | "           | Trace.   | Trace.            |
| "      | 6  | ... | 37.8            | 38.2   | 39.2   | 56     | 68   | 12           | 20   | "                      | "       | 1,030   | "           | "        | "                 |
| "      | 7  | ... | 38.4            | 38.6   | 38.6   | 60     | 64   | 20           | 16   | "                      | Turbid  | 1,028   | "           | "        | "                 |
| "      | 8  | ... | 37.4            | 38.2   | 38.2   | 41     | 60   | 12           | 12   | "                      | "       | 1,026   | "           | Nil.     | Nil.              |
| "      | 9  | ... | 38.6            | 38.6   | 39.6   | 52     | 72   | 12           | 12   | "                      | Clear   | 1,028   | "           | "        | "                 |
| "      | 10 | ... | 38.6            | 38.8   | 39.0   | 64     | 72   | 16           | 16   | "                      | "       | 1,030   | "           | "        | "                 |
| "      | 11 | ... | 38.2            | 37.9   | 38.8   | 52     | 64   | 16           | 20   | "                      | Turbid. | 1,040   | "           | "        | "                 |
| "      | 12 | ... | 38.3            | 39.1   | 38.6   | 56     | 64   | 16           | 16   | "                      | Clear.  | 1,043   | "           | "        | 1/16              |
| "      | 13 | ... | 38.2            | 38.2   | 38.8   | 48     | 60   | 16           | 16   | "                      | "       | 1,028   | "           | "        | Nil.              |
| "      | 14 | ... | 37.8            | 38.4   | 39.3   | 56     | 60   | 20           | 20   | "                      | "       | 1,032   | "           | "        | "                 |
| "      | 15 | ... | 37.9            | 38.4   | 38.6   | 52     | 64   | 12           | 12   | "                      | "       | 1,018   | "           | "        | "                 |
| "      | 16 | ... | 38.6            | 38.8   | 39.4   | 56     | 80   | 16           | 20   | "                      | "       | 1,032   | "           | "        | "                 |
| "      | 17 | ... | 38.4            | 38.8   | 39.6   | 84     | 88   | 16           | 32   | "                      | "       | 1,014   | "           | "        | "                 |
| "      | 18 | ... | 38.2            | 38.1   | 39.0   | 72     | 69   | 16           | 44   | "                      | Turbid. | 1,028   | "           | "        | "                 |
| "      | 19 | ... | 38.6            | 38.8   | 38.9   | 76     | 96   | 60           | 28   | "                      | Clear.  | 1,030   | "           | Trace.   | "                 |
| "      | 20 | ... | 39.0            | 39.0   | 38.6   | 88     | 72   | 28           | 20   | "                      | "       | 1,026   | "           | Nil.     | "                 |
| "      | 21 | ... | 38.2            | 38.6   | 39.0   | 64     | 64   | 16           | 28   | "                      | "       | 1,028   | "           | Trace.   | "                 |
| "      | 22 | ... | 37.8            | 38.2   | 38.8   | 60     | 84   | 16           | 20   | "                      | "       | 1,032   | "           | Nil.     | Trace.            |
| "      | 23 | ... | 38.2            | 38.6   | 39.2   | 64     | 92   | 12           | 16   | "                      | "       | 1,012   | "           | S        | "                 |
| "      | 24 | ... | 37.8            | 38.4   | 39.0   | 64     | 76   | 16           | 20   | "                      | "       | 1,036   | "           | "        | "                 |
| "      | 25 | ... | 38.8            | 38.8   | 39.4   | 60     | 80   | 40           | 68   | "                      | "       | 1,042   | "           | "        | "                 |
| "      | 26 | ... | 37.7            | 38.6   | 39.3   | 64     | 84   | 16           | 24   | "                      | "       | 1,032   | "           | "        | "                 |
| "      | 27 | ... | 38.8            | 38.6   | 38.6   | 80     | 76   | 20           | 18   | "                      | "       | 1,034   | "           | "        | "                 |
| "      | 28 | ... | 38.0            | 38.0   | 38.5   | 56     | 56   | 20           | 16   | "                      | "       | 1,024   | "           | Trace.   | Nil.              |
| "      | 29 | ... | 38.5            | 38.6   | 89.0   | 60     | 80   | 36           | 20   | "                      | "       | 1,021   | "           | "        | "                 |
| "      | 30 | ... | 38.3            | 39.5   | 39.4   | 64     | 62   | 16           | 14   | "                      | "       | 1,016   | "           | Nil.     | "                 |
| "      | 31 | ... | 38.6            | 39.5   | 39.8   | 68     | 76   | 20           | 24   | "                      | "       | 1,028   | "           | "        | 1/12              |
| Sept.  | 1  | ... | 38.2            | 38.7   | 39.2   | 64     | 72   | 20           | 20   | "                      | "       | 1,016   | "           | "        | Nil.              |
| "      | 2  | ... | 37.7            | 38.5   | 38.2   | 64     | 56   | 16           | 16   | "                      | "       | 1,028   | "           | Trace.   | "                 |
| "      | 3  | ... | 38.3            | 38.4   | 39.2   | 52     | 64   | 20           | 20   | "                      | Turbid. | 1,040   | "           | "        | "                 |
| "      | 4  | ... | 38.2            | 38.4   | 38.4   | 44     | 48   | 16           | 12   | "                      | Clear.  | 1,050   | "           | Nil.     | "                 |
| "      | 5  | ... | 38.3            | 38.2   | 39.4   | 44     | 72   | 16           | 16   | "                      | "       | 1,049   | "           | "        | "                 |
| "      | 6  | ... | 38.8            | 39.3   | 39.4   | 76     | 64   | 24           | 20   | "                      | "       | 1,044   | "           | Trace.   | 1/12              |
| "      | 7  | ... | 38.3            | 38.2   | 38.8   | 72     | 68   | 20           | 24   | "                      | "       | 1,022   | "           | "        | Nil.              |
| "      | 8  | ... | 38.2            | 38.3   | 38.8   | 60     | 68   | 16           | 20   | "                      | Turbid. | 1,036   | "           | "        | 1/14              |
| "      | 9  | ... | 38.4            | 39.2   | 39.0   | 60     | 84   | 20           | 28   | "                      | Clear.  | 1,018   | "           | Nil.     | Trace.            |
| "      | 10 | ... | 38.3            | 39.2   | 38.6   | 72     | 72   | 20           | 24   | "                      | "       | 1,034   | "           | Trace.   | Nil.              |
| "      | 11 | ... | 39.2            | 38.6   | 39.6   | 72     | 80   | 36           | 56   | "                      | "       | 1,024   | "           | Nil.     | "                 |
| "      | 12 | ... | 38.5            | 39.4   | 39.7   | 88     | 88   | 20           | 36   | "                      | "       | 1,024   | "           | "        | Trace.            |
| "      | 13 | ... | 38.8            | 38.8   | 38.6   | 84     | 72   | 24           | 16   | "                      | "       | 1,028   | "           | Trace.   | "                 |
| "      | 14 | ... | 38.4            | 39.2   | 38.9   | 68     | 64   | 32           | 16   | "                      | "       | 1,026   | "           | "        | "                 |
| "      | 15 | ... | 38.8            | 38.8   | 39.4   | 68     | 76   | 32           | 24   | "                      | "       | 1,042   | "           | Nil.     | 1/6               |
| "      | 16 | ... | 39.0            | 39.3   | 39.0   | 92     | 68   | 32           | 24   | "                      | Turbid. | 1,030   | "           | "        | 1/8               |
| "      | 17 | ... | 38.0            | 39.3   | 39.0   | 56     | 84   | 12           | 24   | "                      | Clear   | 1,018   | "           | Trace.   | Nil.              |



## RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Calf- Contracted 'Surra' by suckling Milk of Mother.

Age, 3 weeks — Sex, Female — Colour, —

Disease, Rat Surra through 'Cow' &c. \_\_\_\_\_ Date of \_\_\_\_\_

Result, \_\_\_\_\_ Date of Result, \_\_\_\_\_ Register No. I

[illegible]

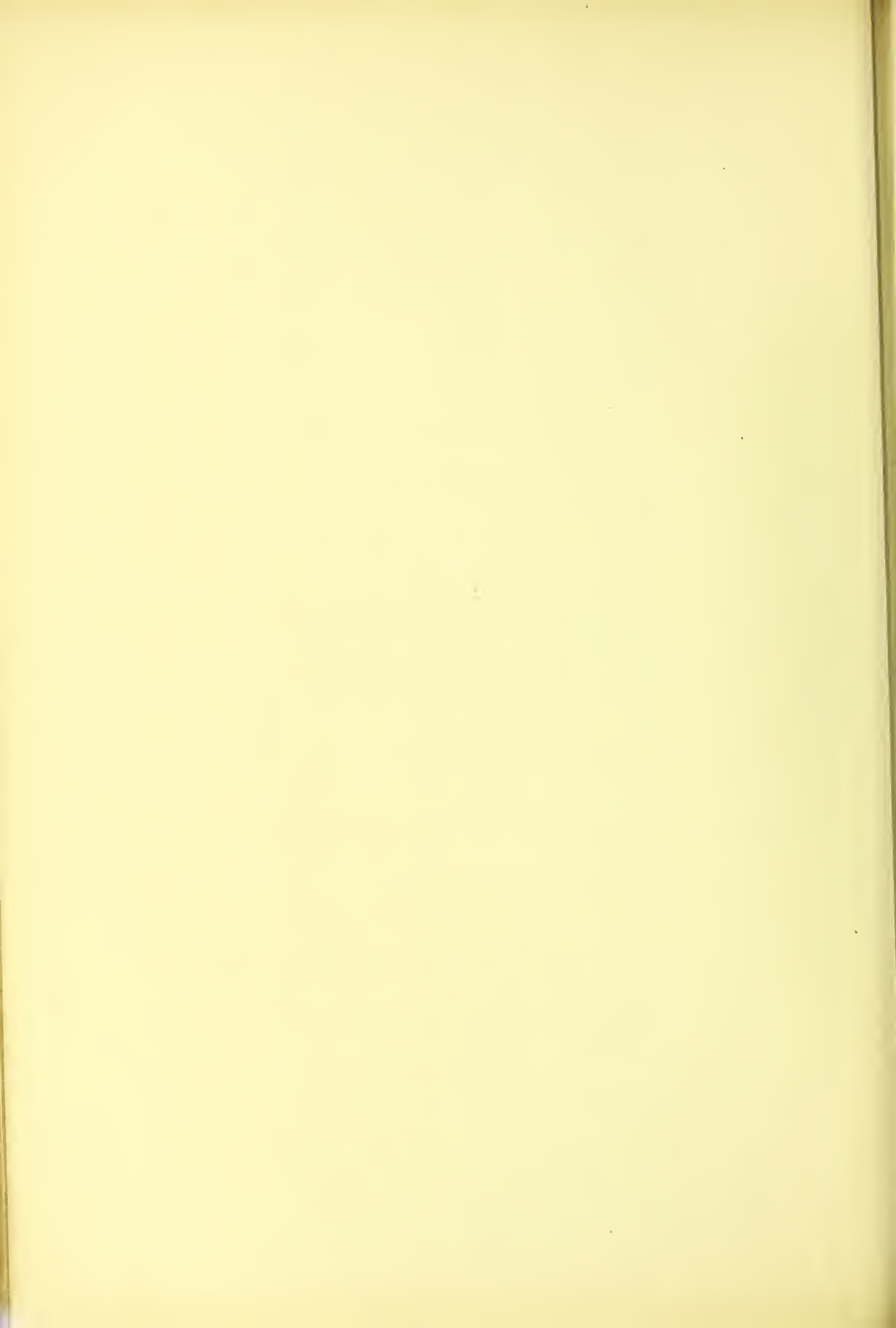
(S. 415)

X Cow inoculated.

X Haematosa appeared in the blood of the Cow.

Pulse.....  
Respiration.....

Drawn & Litho: Govt Photoducing Office, Poona 1893.  
 & Haden & Co. Printed in the City of Bombay.



RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Calf \_\_\_\_\_ Age, \_\_\_\_\_ Sex, \_\_\_\_\_ Colour, \_\_\_\_\_  
Disease, \_\_\_\_\_ Result, \_\_\_\_\_ Date of \_\_\_\_\_ Register No. I \_\_\_\_\_

| Dates of Observation.        |                        | Sep.<br>16  | 17   | 18          | 19   | 20          | 21   | 22          | 23   | 24          | 25   | 26          | 27   | 28          | 29   | 30          | Oct.<br>1 | 2           | 3    | 4           | 5    | 6           | 7    | 8           |      |
|------------------------------|------------------------|-------------|------|-------------|------|-------------|------|-------------|------|-------------|------|-------------|------|-------------|------|-------------|-----------|-------------|------|-------------|------|-------------|------|-------------|------|
| Days of Disease              |                        | Time        |      | Time        |      | Time        |      | Time        |      | Time        |      | Time        |      | Time        |      | Time        |           | Time        |      | Time        |      | Time        |      | Time        |      |
|                              |                        | A.M.        | P.M. | A.M.        | P.M. | A.M.        | P.M. | A.M.        | P.M. | A.M.        | P.M. | A.M.        | P.M. | A.M.        | P.M. | A.M.        | P.M.      | A.M.        | P.M. | A.M.        | P.M. | A.M.        | P.M. | A.M.        | P.M. |
| Organisms in Blood.          |                        | Temperature |      | Temperature |      | Temperature |      | Temperature |      | Temperature |      | Temperature |      | Temperature |      | Temperature |           | Temperature |      | Temperature |      | Temperature |      | Temperature |      |
| Respiration<br>per<br>minute | Pulse<br>per<br>minute | F           | C    | Time        |      | Time        |      | Time        |      | Time        |      | Time        |      | Time        |      | Time        |           | Time        |      | Time        |      | Time        |      | Time        |      |
| 55                           | 120                    | 114         | 45°  | 8           |      |             |      |             |      |             |      |             |      |             |      |             |           |             |      |             |      |             |      |             |      |
| 50                           | 110                    | 112         | 44°  | 8           |      |             |      |             |      |             |      |             |      |             |      |             |           |             |      |             |      |             |      |             |      |
| 45                           | 100                    | 111         | 43°  | 8           |      |             |      |             |      |             |      |             |      |             |      |             |           |             |      |             |      |             |      |             |      |
| 40                           | 90                     | 109         | 42°  | 8           |      |             |      |             |      |             |      |             |      |             |      |             |           |             |      |             |      |             |      |             |      |
| 35                           | 80                     | 107         | 41°  | 8           |      |             |      |             |      |             |      |             |      |             |      |             |           |             |      |             |      |             |      |             |      |
| 30                           | 70                     | 105         | 40°  | 8           |      |             |      |             |      |             |      |             |      |             |      |             |           |             |      |             |      |             |      |             |      |
| 25                           | 60                     | 103         | 39°  | 8           |      |             |      |             |      |             |      |             |      |             |      |             |           |             |      |             |      |             |      |             |      |
| 20                           | 50                     | 102         | 38°  | 8           |      |             |      |             |      |             |      |             |      |             |      |             |           |             |      |             |      |             |      |             |      |
| 15                           | 40                     | 101         | 37°  | 8           |      |             |      |             |      |             |      |             |      |             |      |             |           |             |      |             |      |             |      |             |      |
| 10                           | 30                     | 99          | 36°  | 8           |      |             |      |             |      |             |      |             |      |             |      |             |           |             |      |             |      |             |      |             |      |
| 5                            | 20                     | 98          | 35°  | 8           |      |             |      |             |      |             |      |             |      |             |      |             |           |             |      |             |      |             |      |             |      |
|                              |                        | 97          | 34°  | 8           |      |             |      |             |      |             |      |             |      |             |      |             |           |             |      |             |      |             |      |             |      |
|                              |                        | 96          |      | 8           |      |             |      |             |      |             |      |             |      |             |      |             |           |             |      |             |      |             |      |             |      |
|                              |                        | 95          |      | 8           |      |             |      |             |      |             |      |             |      |             |      |             |           |             |      |             |      |             |      |             |      |
|                              |                        | 94          |      | 8           |      |             |      |             |      |             |      |             |      |             |      |             |           |             |      |             |      |             |      |             |      |

(S. 415)  
Haematazoan Curve \_\_\_\_\_ Pulse, \_\_\_\_\_ Respiration \_\_\_\_\_  
Drawn & Litho: Govt. Photodupco: Office, Poona 1893.





RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Calf \_\_\_\_\_ Age, \_\_\_\_\_ Sex, \_\_\_\_\_ Colour, \_\_\_\_\_  
Disease, \_\_\_\_\_ Result, \_\_\_\_\_ Date of Result, \_\_\_\_\_ Register No. I \_\_\_\_\_

| Dates of Observation.         |                        | Oct.        | 9   | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   |      |      |      |      |      |      |      |      |
|-------------------------------|------------------------|-------------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Days of Disease               |                        |             | 1   | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   |
| Organisms in Blood.           |                        |             | F   | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| Respiration<br>per<br>minute. | Pulse<br>per<br>minute | Temperature |     | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      |
|                               |                        | F           | C   | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| —                             | —                      | 114         | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 55                            | 120                    | 113         | 45° | 8    | 4    | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 112         | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 50                            | 110                    | 111         | 44° | 8    | 4    | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 110         | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 45                            | 100                    | 109         | 43° | 8    | 4    | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 108         | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 40                            | 90                     | 107         | 42° | 8    | 4    | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 106         | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 35                            | 80                     | 105         | 41° | 8    | 4    | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 104         | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 30                            | 70                     | 103         | 40° | 8    | 4    | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 102         | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 25                            | 60                     | 101         | 39° | 8    | 4    | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 100         | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 20                            | 50                     | 99          | 38° | 8    | 4    | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 98          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 15                            | 40                     | 97          | 37° | 8    | 4    | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 96          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 10                            | 30                     | 95          | 36° | 8    | 4    | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 94          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 5                             | 20                     | 93          | 35° | 8    | 4    | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 92          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 91          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 90          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 89          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 88          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 87          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 86          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 85          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 84          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 83          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 82          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 81          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 80          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 79          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 78          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 77          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 76          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 75          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 74          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 73          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 72          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 71          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 70          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 69          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 68          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 67          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                      | 66          | —   | 8    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |      |      |      |      |      |      |      |      |      |      |      |

(5.415)

Haematocrit Curve \_\_\_\_\_  
Temperature.....  
Pulse.....  
Respiration.....  
Drawn & Litho: Govt. Photodup. Office, Poona 1893.





Calf \_\_\_\_\_ Age, \_\_\_\_\_ Sex, \_\_\_\_\_ Colour, \_\_\_\_\_  
Disease, \_\_\_\_\_ Date of \_\_\_\_\_ Result, \_\_\_\_\_ Date of Result, \_\_\_\_\_ Register No. I \_\_\_\_\_

| Dates of Observation.         |                         | Nov.               | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   |
|-------------------------------|-------------------------|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Days of Disease.              |                         | 24                 | 25   | 26   | 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   | 36   | 37   | 38   | 39   | 40   | 41   | 42   | 43   | 44   | 45   | 46   |
| Organisms in Blood.           |                         | —                  | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| Respiration<br>per<br>minute. | Pulse<br>per<br>minute. | Temperature<br>F C | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      |
|                               |                         |                    | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| —                             | —                       | 114                | 8    | 6    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 55                            | 120                     | 113                | 45°  | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 50                            | 110                     | 112                | 44°  | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 45                            | 100                     | 111                | 8    | 6    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 40                            | 90                      | 110                | 43°  | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 35                            | 80                      | 109                | 8    | 6    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 30                            | 70                      | 108                | 42°  | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 25                            | 60                      | 107                | 8    | 6    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 20                            | 50                      | 106                | 41°  | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 15                            | 40                      | 105                | 8    | 6    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 10                            | 30                      | 104                | 40°  | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 5                             | 20                      | 103                | 8    | 6    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                       | 102                | 39°  | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                       | 101                | 8    | 6    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                       | 100                | 38°  | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                       | 99                 | 8    | 6    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                       | 98                 | 37°  | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                       | 97                 | 8    | 6    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                       | 96                 | 36°  | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                       | 95                 | 8    | 6    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                       | 94                 | 35°  | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                       | 94                 | 8    | 6    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| —                             | —                       | 94                 | 34°  | 2    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |

(5.415)  
Hæmatocrit Curve \_\_\_\_\_ Pulse \_\_\_\_\_ Respiration \_\_\_\_\_  
Drawn & Litho: Govt Photodupl. Office, Poona 1893.



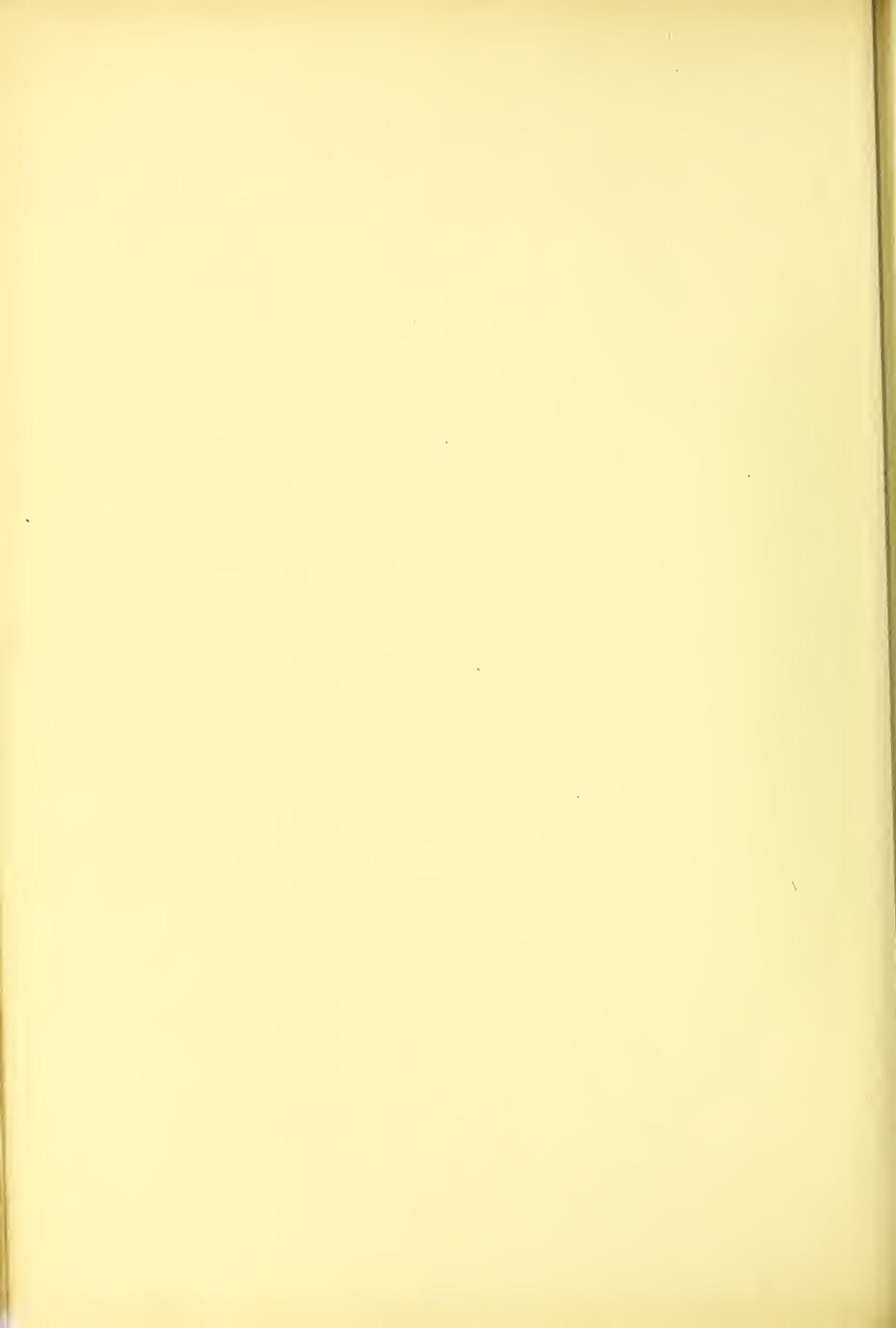
RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Calf \_\_\_\_\_ Disease \_\_\_\_\_ Date of \_\_\_\_\_ Result \_\_\_\_\_ Date of Result \_\_\_\_\_ Register No. I \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_ Colour \_\_\_\_\_

| Dates of Observation.   |                   | Nov. 24       | 25            | 26   | 27   | 28   | 29   | 30   | Dec. 1 | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   |
|-------------------------|-------------------|---------------|---------------|------|------|------|------|------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Days of Disease         |                   | 47            | 48            | 49   | 50   | 51   | 52   | 53   | 54     | 55   | 56   | 57   | 58   | 59   | 60   | 61   | 62   | 63   | 64   | 65   | 66   | 67   | 68   | 69   |
| Organisms in Blood.     |                   | —             | —             | —    | —    | —    | —    | —    | —      | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| Respiration per minute. | Pulse per minute. | Temperature F | Temperature C | Time | Time | Time | Time | Time | Time   | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |
| 55                      | 120               | 114           | 45°           | 9    | 6    | 4    | 2    | 1    | 1      | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
| 50                      | 110               | 112           | 44°           | 8    | 6    | 4    | 2    | 1    | 1      | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
| 45                      | 100               | 110           | 43°           | 8    | 6    | 4    | 2    | 1    | 1      | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
| 40                      | 90                | 108           | 42°           | 8    | 6    | 4    | 2    | 1    | 1      | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
| 35                      | 80                | 106           | 41°           | 8    | 6    | 4    | 2    | 1    | 1      | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
| 30                      | 70                | 104           | 40°           | 8    | 6    | 4    | 2    | 1    | 1      | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
| 25                      | 60                | 103           | 39°           | 8    | 6    | 4    | 2    | 1    | 1      | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
| 20                      | 50                | 101           | 38°           | 8    | 6    | 4    | 2    | 1    | 1      | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
| 15                      | 40                | 99            | 37°           | 8    | 6    | 4    | 2    | 1    | 1      | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
| 10                      | 30                | 97            | 36°           | 8    | 6    | 4    | 2    | 1    | 1      | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
| 5                       | 20                | 95            | 35°           | 8    | 6    | 4    | 2    | 1    | 1      | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
|                         |                   | 94            | 34°           | 8    | 6    | 4    | 2    | 1    | 1      | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |

Record of Organisms in Blood. \_\_\_\_\_  
Survival of 50 in a field of microscope \_\_\_\_\_  
Very poor = 50 \_\_\_\_\_  
Numerous = 20 \_\_\_\_\_  
Few = 5 \_\_\_\_\_  
Absent \_\_\_\_\_  
Hematocrit Curve \_\_\_\_\_  
Pulse \_\_\_\_\_  
Respiration \_\_\_\_\_  
Drawn & Litho: Govt. Photodup. Office, Poona 1893.





RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Calf \_\_\_\_\_ Colour, \_\_\_\_\_ Sex, \_\_\_\_\_ Age, \_\_\_\_\_ Register No. J \_\_\_\_\_ Date of Result, \_\_\_\_\_ Date of \_\_\_\_\_

| Dates of Observation.         |                        | Dec.        | 17  | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   | 31   | Jan/93 | 2    | 3    | 4    | 5    | 6    | 7    | 8    |
|-------------------------------|------------------------|-------------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------|------|------|------|------|------|------|------|
| Days of Disease.              |                        | 70          | 71  | 72   | 73   | 74   | 75   | 76   | 77   | 78   | 79   | 80   | 81   | 82   | 83   | 84   | 85   | 86     | 87   | 88   | 89   | 90   | 91   | 92   |      |
| Organisms in Blood.           |                        | ---         | --- | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---    | ---  | ---  | ---  | ---  | ---  | ---  |      |
| Respiration<br>per<br>minute. | Pulse<br>per<br>minute | Temperature |     | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time |      | Time   |      | Time |      | Time |      | Time |      |
|                               |                        | F           | C   | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M.   | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| 55                            | 120                    | 114         | 45° | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4      | 2    | 8    | 6    | 4    | 2    | 8    | 6    |
| 50                            | 110                    | 112         | 44° | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4      | 2    | 8    | 6    | 4    | 2    | 8    | 6    |
| 45                            | 100                    | 110         | 43° | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4      | 2    | 8    | 6    | 4    | 2    | 8    | 6    |
| 40                            | 90                     | 108         | 42° | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4      | 2    | 8    | 6    | 4    | 2    | 8    | 6    |
| 35                            | 80                     | 106         | 41° | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4      | 2    | 8    | 6    | 4    | 2    | 8    | 6    |
| 30                            | 70                     | 104         | 40° | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4      | 2    | 8    | 6    | 4    | 2    | 8    | 6    |
| 25                            | 60                     | 103         | 39° | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4      | 2    | 8    | 6    | 4    | 2    | 8    | 6    |
| 20                            | 50                     | 101         | 38° | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4      | 2    | 8    | 6    | 4    | 2    | 8    | 6    |
| 15                            | 40                     | 99          | 37° | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4      | 2    | 8    | 6    | 4    | 2    | 8    | 6    |
| 10                            | 30                     | 97          | 36° | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4      | 2    | 8    | 6    | 4    | 2    | 8    | 6    |
| 5                             | 20                     | 95          | 35° | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4      | 2    | 8    | 6    | 4    | 2    | 8    | 6    |
|                               |                        | 94          | 34° | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4    | 2    | 8    | 6    | 4      | 2    | 8    | 6    | 4    | 2    | 8    | 6    |

(S. 415) Hematocrit Curve \_\_\_\_\_ Pulse, \_\_\_\_\_ Respiration, \_\_\_\_\_





Calf

1000

Disease.

### Hæmoglobin Curve

(5.415)

| Dates of Observation. |  | Temperature |   | Pulse<br>per<br>minute | Respiration<br>per<br>minute | Time | Days of Disease |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Record of Organisms<br>in Blood | Swarming<br>over 50 in<br>a field of<br>microscope | Very<br>numerous<br>=20 | Numerous<br>=20 | Few<br>=5 | Absent |
|-----------------------|--|-------------|---|------------------------|------------------------------|------|-----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------------------------|--|-------------------------|-----------------|-----------|--------|
| Days of Disease       |  | F           | C |                        |                              |      | 9               | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Days of Disease       |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |
| Organisms in Blood.   |  |             |   |                        |                              |      |                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                 |  |                         |                 |           |        |



RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

Calf \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_ Colour \_\_\_\_\_  
Disease, \_\_\_\_\_ Date of Inoculation 28.8.92 \_\_\_\_\_ Result, \_\_\_\_\_ Date of Result, 30.9.93 \_\_\_\_\_ Register No. \_\_\_\_\_

| Dates of Observation.         |                        | Feb 1905         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
|-------------------------------|------------------------|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Days of Disease.              |                        | 1                | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   |  |
| Organisms in Blood.           |                        | 116              | 117  | 118  | 119  | 120  | 121  | 122  | 123  | 124  | 125  | 126  | 127  | 128  | 129  | 130  | 131  | 132  | 133  | 134  | 135  | 136  | 137  | 138  |  |
| Respiration<br>per<br>minute. | Pulse<br>per<br>minute | Temperature<br>F | C    | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time | Time |  |
|                               | A.M.                   | P.M.             | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |  |
| 55                            | 120                    | 114              | 45°  | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 50                            | 110                    | 112              | 44°  | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 45                            | 100                    | 111              | 43°  | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 40                            | 90                     | 109              | 42°  | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 35                            | 80                     | 107              | 41°  | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 30                            | 70                     | 105              | 40°  | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 25                            | 60                     | 103              | 39°  | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 20                            | 50                     | 101              | 38°  | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 15                            | 40                     | 99               | 37°  | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 10                            | 30                     | 97               | 36°  | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 5                             | 20                     | 95               | 35°  | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
|                               |                        | 94               | 34°  | 8    | 6    | 4    | 2    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |

| Record of Organisms in Blood | Swarming<br>over 50 in<br>a field of<br>microscope | Very<br>numerous<br>=50 | Numerous<br>=20 | Few<br>=5 | Absent |
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(S. 415.)  
Hematization Curve \_\_\_\_\_  
Temperature \_\_\_\_\_  
Pulse \_\_\_\_\_  
Respiration \_\_\_\_\_  
X Re-inoculated subcutaneously at 5.30 p.m. with 1.0 c.c. of blood containing numerous hematozoa, taken from the jugular vein of Horse No. LXXXIV, immediately after death.  
Drawn & Litho: Govt. Photodupl. Office, Poona 1894.





RECORDS OF TEMPERATURE, PULSE AND RESPIRATION

Calf \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_ Colour \_\_\_\_\_

Disease \_\_\_\_\_ Dates of Incub. { 28.8.92 Result, Death Date of Result, 30.9.93 Register No \_\_\_\_\_

| Dates of Observation.  |                  | Feb 24        | 25   | 26 | 27   | 28 | Mar 1 | 2 | 3    | 4 | 5    | 6 | 7    | 8 | 9    | 10 | 11   | 12 | 13   | 14 | 15   | 16 | 17   | 18 |
|------------------------|------------------|---------------|------|----|------|----|-------|---|------|---|------|---|------|---|------|----|------|----|------|----|------|----|------|----|
| Respiration per minute | Pulse per minute | Temperature F | Time |    | Time |    | Time  |   | Time |   | Time |   | Time |   | Time |    | Time |    | Time |    | Time |    | Time |    |
|                        |                  |               | A.M. |    | P.M. |    | A.M.  |   | P.M. |   | A.M. |   | P.M. |   | A.M. |    | P.M. |    | A.M. |    | P.M. |    | A.M. |    |
| 55                     | 120              | 114           | 8    | 5  | 4    | 2  |       |   |      |   |      |   |      |   |      |    |      |    |      |    |      |    |      |    |
| 50                     | 110              | 112           | 8    | 6  | 4    | 2  |       |   |      |   |      |   |      |   |      |    |      |    |      |    |      |    |      |    |
| 45                     | 100              | 111           | 8    | 6  | 4    | 2  |       |   |      |   |      |   |      |   |      |    |      |    |      |    |      |    |      |    |
| 40                     | 90               | 108           | 8    | 6  | 4    | 2  |       |   |      |   |      |   |      |   |      |    |      |    |      |    |      |    |      |    |
| 35                     | 80               | 106           | 8    | 6  | 4    | 2  |       |   |      |   |      |   |      |   |      |    |      |    |      |    |      |    |      |    |
| 30                     | 70               | 104           | 8    | 6  | 4    | 2  |       |   |      |   |      |   |      |   |      |    |      |    |      |    |      |    |      |    |
| 25                     | 60               | 103           | 8    | 6  | 4    | 2  |       |   |      |   |      |   |      |   |      |    |      |    |      |    |      |    |      |    |
| 20                     | 50               | 101           | 8    | 6  | 4    | 2  |       |   |      |   |      |   |      |   |      |    |      |    |      |    |      |    |      |    |
| 15                     | 40               | 99            | 8    | 6  | 4    | 2  |       |   |      |   |      |   |      |   |      |    |      |    |      |    |      |    |      |    |
| 10                     | 30               | 97            | 8    | 6  | 4    | 2  |       |   |      |   |      |   |      |   |      |    |      |    |      |    |      |    |      |    |
| 5                      | 20               | 95            | 8    | 6  | 4    | 2  |       |   |      |   |      |   |      |   |      |    |      |    |      |    |      |    |      |    |
|                        |                  | 94            | 8    | 6  | 4    | 2  |       |   |      |   |      |   |      |   |      |    |      |    |      |    |      |    |      |    |

Record of Organisms in Blood

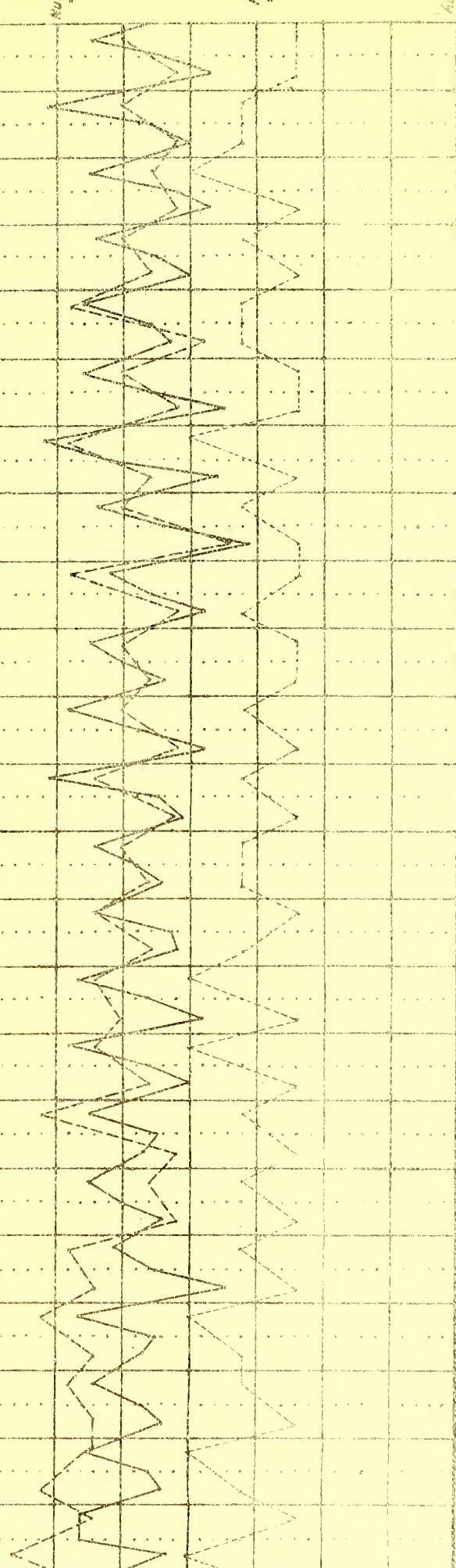
Swarming period in a field of micrococci

Very numerous

Micrococci

Febrile

Allegory



Harmonization Curve  
Temperature  
Pulse  
Respiration  
Drawn & Lined: East Providence Office, Pocono 1895.





| Date. |    |     | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa<br>in Blood. | Colour. | Urine.  |           |             |                   |      |
|-------|----|-----|-----------------|--------|--------|--------|------|--------------|------|------------------------|---------|---------|-----------|-------------|-------------------|------|
|       |    |     | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                        |         | Sp. Gr. | Re-action | Albumen.    | Hippuric<br>Acid. |      |
| 1893. |    |     |                 |        |        |        |      |              |      |                        |         |         |           |             |                   |      |
| Sept. | 18 | ... | 39·6            | 39·0   | 39·4   | 72     | 68   | 24           | 32   | Absent                 | Clear   | ...     | 1,032     | Alkaline... | Nil.              | 1/8  |
| "     | 19 | ... | 38·6            | 38·9   | 38·8   | 84     | 64   | 24           | 16   | "                      | "       | ...     | 1,018     | "           | Trace.            | Nil. |
| "     | 20 | ... | 38·8            | 39·2   | 39·6   | 60     | 68   | 20           | 40   | "                      | "       | ...     | 1,034     | "           | Nil.              | 1/8  |
| "     | 21 | ... | 38·6            | 39·2   | 39·4   | 80     | 56   | 28           | 36   | "                      | "       | ...     | 1,040     | "           | Trace.            | Nil. |
| "     | 22 | ... | 39·4            | 38·6   | 38·8   | 60     | 52   | 40           | 20   | "                      | "       | ...     | 1,044     | "           | Nil.              | 1/12 |
| "     | 23 | ... | 38·6            | 39·0   | 39·2   | 56     | 68   | 40           | 24   | "                      | "       | ...     | 1,030     | "           | "                 | 1/6  |
| "     | 24 | ... | 38·8            | 38·6   | 39·6   | 64     | 76   | 34           | 40   | "                      | "       | ...     | 1,042     | "           | Trace.            | Nil. |
| "     | 25 | ... | 38·8            | 38·8   | 39·0   | 60     | 64   | 40           | 36   | "                      | "       | ...     | 1,034     | "           | "                 | 1/10 |
| "     | 26 | ... | 38·8            | 38·5   | 38·8   | 80     | 72   | 44           | 24   | "                      | "       | ...     | 1,024     | "           | "                 | Nil. |
| "     | 27 | ... | 39·2            | 39·0   | 38·9   | 96     | 76   | 40           | 24   | "                      | "       | ...     | 1,030     | "           | "                 | "    |
| "     | 28 | ... | 38·6            | 38·6   | 38·8   | 68     | 72   | 26           | 24   | "                      | "       | ...     | 1,036     | "           | "                 | "    |

8 A.M.—The animal appeared in good health; at 5 P. M. somewhat severe diarrhœa first noticed.

" 29 ... 38.6 | 39.0 | 38.8 | 100 | 120 | 24 | 28 | " ... " ... 1,028 | " ... " | "

8 A.M.—The animal is very weak. Extremities cold. There is a glairy discharge from the mouth and nose. The diarrhœa has continued through the night, and the evacuations now contain mucus and a small quantity of blood. 5 P.M.—The animal has rallied a little, and the symptoms are less pronounced.

" 30 ... 38.6 | 38.2 | 37.6 | 56 | 64 | 28 | 16 | " ... " ... 1,024 | " ... Trace. | "

8 A.M.—The animal is worse, and later in the day the symptoms increased in virulence, and death took place at 11 P.M. from rinderpest.

*Remarks.—Calf.*—This animal was about 26 days old when it was brought to the Laboratory at the side of its mother. The cow was inoculated on the 28th of August 1892 with soiled blood, and the hæmatozoon appeared in its blood on September 2nd, and remained present until the evening of the 6th. The calf was allowed to suck its mother three times daily, but during the intervals was secured at some distance from, but in sight of the cow. The milk from each teat of the cow was subjected to microscopical examination for a considerable period, but no sign of the hæmatozoon was discovered. Up to the morning of the 9th October, the thirty-eighth day from the appearance of the organism in the blood of the mother, on microscopical examination of the calf's blood, hæmatozoa were found of some length and very active in their movements. From that day until the 8th January 1893 no more organisms were observed although careful examination of the blood was made daily. A point of considerable interest is observed on reference to the charts of the mother and young one. In the case of the latter the falls in temperature of the mother are faithfully recorded on that of the calf, and when the temperature of the cow became markedly of an intermittent type, it was recorded, and if anything rather exaggerated, in the temperature curve of the young one. The calf on the 8th January 1893 was in good condition and had grown considerably.

This animal was re-inoculated on the 9th February 1893 with 1.0 c.c. of blood containing numerous hæmatozoa drawn from the jugular vein of Horse No. LXXXIV, immediately after death. The latent period occupied 3 days, and three paroxysms of 2, 1 and 1 days, with two intermissions of 3 and 123 days, followed respectively. Death from rinderpest, accidentally contracted, occurred 100 days after the last appearance of the hæmatozoon in the blood.



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# RAT SURRA.

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## APPENDIX X.

SUBCUTANEOUS INOCULATION OF GUINEA PIGS WITH URINE PASSED BY  
ANIMALS DURING A PAROXYSM OF SURRA.

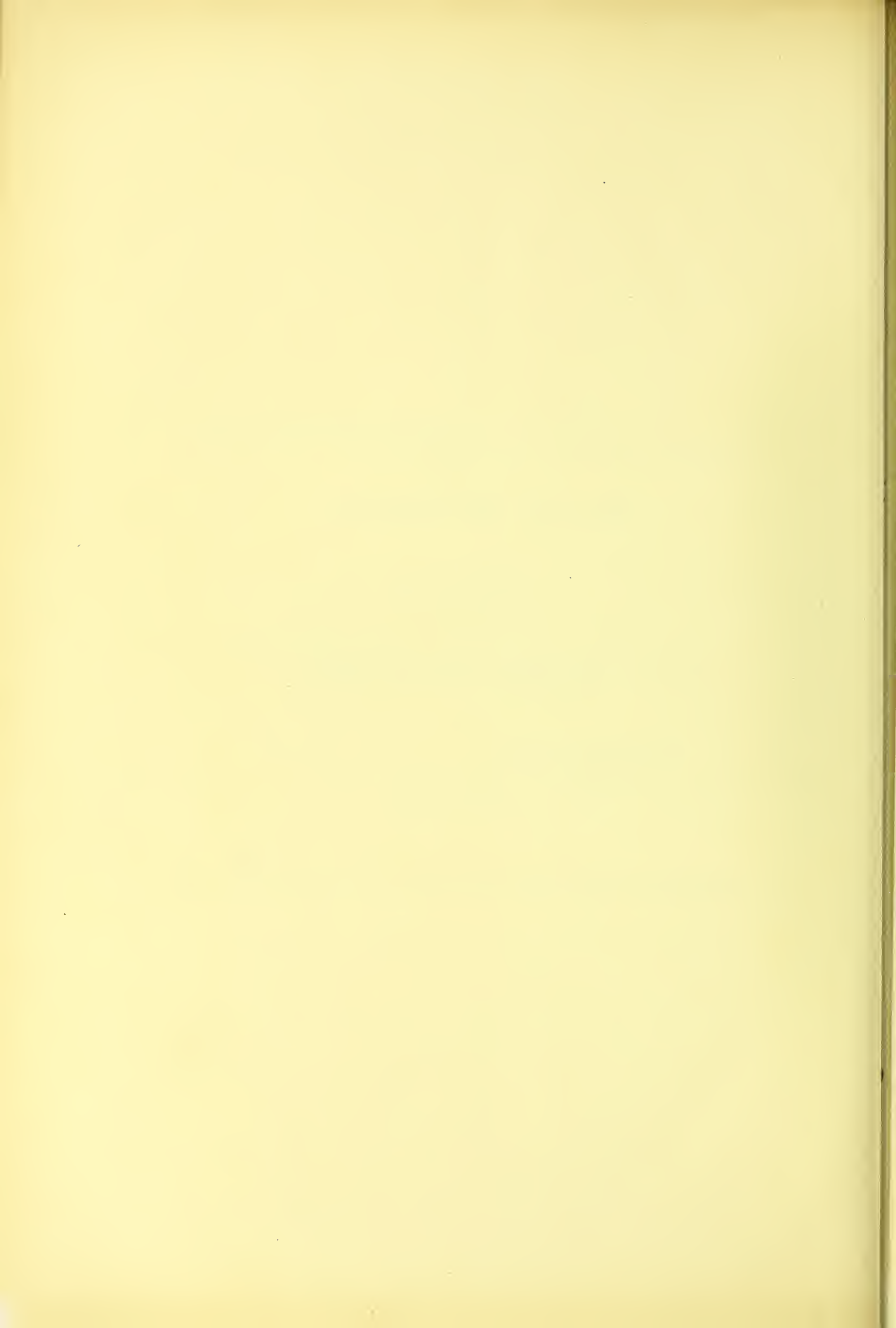
### RESULTS NEGATIVE—

GUINEA PIGS (BULL No. I II).

” ” (DONKEY No. II).

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## GUINEA PIGS INOCULATED WITH URINE FROM THE BULL.

August 8th, 1892.—Examined the blood of two Guinea Pigs and found it in both cases healthy. At 3-30 P.M. injected both animals subcutaneously in the inguinal region with 2 c.c. of urine passed one hour previously by Bull No. III, in whose blood hæmatozoa were swarming at the time. The urine was first allowed to settle for one hour; the supernatant liquid was then poured off, and the remaining few cubic centimetres injected.

No. I.

No. II.

| Month and Date. | Condition of Blood.    | Temperature °C. |      | Month and Date. | Condition of Blood.                        | Temperature °C. |      |
|-----------------|------------------------|-----------------|------|-----------------|--|-----------------|------|
|                 |                        | A.M.            | P.M. |                 |  | A.M.            | P.M. |
| 1893            |                        |                 |      | 1893.           |  |                 |      |
| August 8 ...    | Before inoculation ... | 40.3            | ...  | August 8 ...    | Before inoculation ...                     | 39.7            | ...  |
| " 9 ...         | Hæmatozoa absent ...   | 39.2            | 40.0 | " 9 ...         | Hæmatozoa absent ...                       | 39.4            | 40.1 |
| " 10 ...        | " "                    | 39.1            | 40.2 | " 10 ...        | " "  | 39.3            | 40.0 |
| " 11 ...        | " "                    | 39.2            | 40.1 | " 11 ...        | " "  | 38.0            | 39.7 |
| " 12 ...        | " "                    | 39.3            | 39.3 | " 12 ...        | " "  | 38.6            | 39.0 |
| " 13 ...        | " "                    | 39.3            | 39.8 | " 13 ...        | " "  | 38.6            | 39.7 |
| " 14 ...        | " "                    | 39.3            | 39.7 | " 14 ...        | " "  | 39.0            | 39.5 |
| " 15 ...        | " "                    | 39.3            | 40.2 | " 15 ...        | " "  | 39.0            | 40.2 |
| " 16 ...        | " "                    | 39.3            | 40.2 | " 16 ...        | " "  | 38.0            | 39.6 |
| " 17 ...        | " "                    | 39.3            | 40.0 | " 17 ...        | " "  | 39.0            | 39.8 |
| " 18 ...        | " "                    | 40.0            | 40.2 | " 18 ...        | " "  | 39.3            | 40.0 |
| " 19 ...        | " "                    | 39.3            | 40.0 | " 19 ...        | " "  | 39.0            | 39.3 |
| " 20 ...        | " "                    | 40.0            | 37.6 | " 20 ...        | " "  | 39.3            | 39.8 |
| " 21 ...        | " "                    | 39.3            | 39.6 | " 21 ...        | " "  | 38.7            | 39.5 |
| " 22 ...        | " "                    | 39.8            | 40.4 | " 22 ...        | " "  | 39.7            | 40.2 |
| " 23 ...        | " "                    | 39.3            | 40.0 | " 23 ...        | " "  | 39.3            | 40.2 |
| " 24 ...        | " "                    | 39.3            | 40.1 | " 24 ...        | " "  | 40.2            | 40.0 |
| " 25 ...        | " "                    | 38.0            | 35.5 | " 25 ...        | " "  | 39.7            | 40.0 |
| " 26 ...        | Death from accident.   |                 |      | " 26 ...        | " "  | 39.0            | 40.1 |
|                 |                        |                 |      | " 27 ...        | " "  | 38.5            | 40.1 |
|                 |                        |                 |      | " 28 ...        | " "  | 40.1            | 39.8 |
|                 |                        |                 |      | " 29 ...        | " "  | 39.1            | 39.6 |
|                 |                        |                 |      | " 30 ...        | " "  | 38.1            | 39.3 |
|                 |                        |                 |      | " 31 ...        | " "  | 38.0            | 40.1 |
|                 |                        |                 |      | Septem. 1 ...   | " "  | 39.3            | 40.0 |
|                 |                        |                 |      | " 2 ...         | " "  | 39.1            | 40.0 |
|                 |                        |                 |      | " 3 ...         | " "  | 38.6            | 39.4 |
|                 |                        |                 |      | " 4 ...         | " "  | 39.2            | 39.7 |
|                 |                        |                 |      | " 5 ...         | " "  | 39.3            | 40.0 |
|                 |                        |                 |      | " 6 ...         | " "  | 39.3            | 39.6 |
|                 |                        |                 |      | " 7 ...         | " "  | 39.3            | 40.3 |
|                 |                        |                 |      | " 8 ...         | " "  | 39.8            | 39.3 |
|                 |                        |                 |      | " 9 ...         | " "  | 39.8            | 39.3 |
|                 |                        |                 |      | " 10 ...        | " "  | 39.0            | 38.0 |
|                 |                        |                 |      | " 11 ...        | " "  | 39.1            | 37.8 |
|                 |                        |                 |      | " 12 ...        | " "  | 38.0            | 38.6 |
|                 |                        |                 |      | " 13 ...        | " "  | 39.6            | 40.0 |
|                 |                        |                 |      | " 14 ...        | " "  | 39.3            | 40.0 |
|                 |                        |                 |      | " 15 ...        | " "  | 38.8            | 40.1 |
|                 |                        |                 |      | " 16 ...        | " "  | 39.7            | 40.1 |
|                 |                        |                 |      | " 17 ...        | " "  | 39.3            | 39.6 |
|                 |                        |                 |      | " 18 ...        | " "  | 39.6            | 39.3 |
|                 |                        |                 |      | " 19 ...        | " "  | 39.3            | 40.0 |
|                 |                        |                 |      | " 20 ...        | " "  | 39.3            | 39.8 |
|                 |                        |                 |      | " 21 ...        | " "  | 39.7            | 39.3 |
|                 |                        |                 |      | " 22 ...        | " "  | 39.1            | 39.8 |
|                 |                        |                 |      | " 23 ...        | " "  | 39.6            | 40.0 |
|                 |                        |                 |      | " 24 ...        | " "  | 40.0            | 39.8 |
|                 |                        |                 |      | " 25 ...        | " "  | 39.3            | 39.0 |
|                 |                        |                 |      | " 26 ...        | " "  | 39.7            | 39.1 |
|                 |                        |                 |      | " 27 ...        | " "  | 39.3            | 40.0 |
|                 |                        |                 |      | " 28 ...        | " "  | 39.8            | 40.0 |
|                 |                        |                 |      | " 29 ...        | " "  | 40.0            | 40.1 |
|                 |                        |                 |      | " 30 ...        | " "  | 39.3            | ...  |
|                 |                        |                 |      |                 | Negative result. Observation discontinued. |                 |      |

GUINEA PIGS INOCULATED WITH URINE FROM THE DONKEY.

August 8th, 1893.—Examined the blood of two Guinea Pigs (Nos. I and II) and found it healthy; at 3-15 p.m. inoculated both animals subcutaneously in the inguinal region with 2·0 c.c. of urine passed one hour previously by the Donkey in whose blood the day previous hæmatozoa were swarming. The urine was first allowed to settle for one hour, the supernatant liquid was then poured off, and the remaining few cubic centimetres injected.

No. I.

No. II.

| Month and Date. | Condition of Blood.                            | Temperature °C. |      | Month and Date. | Condition of Blood.  | Temperature °C. |      |
|-----------------|--|-----------------|------|-----------------|--|-----------------|------|
|                 |  | A.M.            | P.M. |                 |  | A.M.            | P.M. |
| 1892.           |  |                 |      | 1892.           |  |                 |      |
| August 8 ...    | Previous to the inoculation ...                | 40·6            | ...  | August 8 ...    | Previous to the inoculation ...  | 40·1            | ...  |
| " 9 ...         | Hæmatozoa absent ...                           | 39·8            | 40·2 | " 9 ...         | Hæmatozoa absent ...   | 39·8            | 40·3 |
| " 10 ...        | " "  | 39·3            | 40·3 | " 10 ...        | " "  | 40·2            | 40·4 |
| " 11 ...        | " "  | 39·3            | 40·0 | " 11 ...        | " "  | 39·3            | 40·0 |
| " 12 ...        | " "  | 39·3            | 40·2 | " 12 ...        | " "  | 38·5            | 39·7 |
| " 13 ...        | " "  | 39·1            | 39·6 | " 13 ...        | " "  | 39·0            | 39·3 |
| " 14 ...        | " "  | 39·0            | 39·7 | " 14 ...        | " "  | 39·0            | 39·5 |
| " 15 ...        | " "  | 39·2            | 40·1 | " 15 ...        | " "  | 39·2            | 40·4 |
| " 16 ...        | " "  | 38·8            | 40·0 | " 16 ...        | " "  | 39·0            | 40·3 |
| " 17 ...        | " "  | 39·8            | 40·2 | " 17 ...        | " "  | 40·1            | 40·4 |
| " 18 ...        | " "  | 39·5            | 40·0 | " 18 ...        | " "  | 40·0            | 39·5 |
| " 19 ...        | " "  | 39·1            | 40·2 | " 19 ...        | " "  | 39·3            | 40·3 |
| " 20 ...        | " "  | 39·3            | 39·6 | " 20 ...        | Diarrhœa; animal looks dull...   | 39·3            | 39·7 |
| " 21 ...        | " "  | 39·2            | 39·8 | " 21 ...        | Hæmatozoa absent ...   | 35·0            | ...  |
| " 22 ...        | " "  | 39·3            | 40·0 | " 22 ...        | Diarrhœa continues; no hæmatozoa in the blood. The red corpuscles do not form rouleaux; no increase in the number of white corpuscles. A large number of granular protoplasmic bodies in the blood. At 12-30 p.m. animal was very weak and evidently dying. Death. |                 |      |
| " 23 ...        | " "  | 39·3            | 39·5 |                 |  |                 |      |
| " 24 ...        | " "  | 40·1            | 40·0 |                 |  |                 |      |
| " 25 ...        | " "  | 40·0            | 40·1 |                 |  |                 |      |
| " 26 ...        | " "  | 39·5            | 39·3 |                 |  |                 |      |
| " 27 ...        | " "  | 39·2            | 39·7 |                 |  |                 |      |
| " 28 ...        | " "  | 39·7            | 40·2 |                 |  |                 |      |
| " 29 ...        | " "  | 38·6            | 40·0 |                 |  |                 |      |
| " 30 ...        | " "  | 38·7            | 40·0 |                 |  |                 |      |
| " 31 ...        | " "  | 38·6            | 40·0 |                 |  |                 |      |
| Septem. 1 ...   | " "  | 39·3            | 39·3 |                 |  |                 |      |
| " 2 ...         | " "  | 38·6            | 39·7 |                 |  |                 |      |
| " 3 ...         | " "  | 39·1            | 39·8 |                 |  |                 |      |
| " 4 ...         | " "  | 39·3            | 39·8 |                 |  |                 |      |
| " 5 ...         | " "  | 39·6            | 39·7 |                 |  |                 |      |
| " 6 ...         | " "  | 39·2            | 39·5 |                 |  |                 |      |
| " 7 ...         | " "  | 40·0            | 40·0 |                 |  |                 |      |
| " 8 ...         | " "  | 39·3            | 39·7 |                 |  |                 |      |
| " 9 ...         | " "  | 39·6            | 39·8 |                 |  |                 |      |
| " 10 ...        | " "  | 39·8            | 39·3 |                 |  |                 |      |
| " 11 ...        | " "  | 39·3            | 38·0 |                 |  |                 |      |
| " 12 ...        | " "  | 39·3            | 39·0 |                 |  |                 |      |
| " 13 ...        | " "  | 39·6            | 39·8 |                 |  |                 |      |
| " 14 ...        | " "  | 39·8            | 40·0 |                 |  |                 |      |
| " 15 ...        | " "  | 39·3            | 40·0 |                 |  |                 |      |
| " 16 ...        | " "  | 39·7            | 40·0 |                 |  |                 |      |
| " 17 ...        | " "  | 39·0            | 39·5 |                 |  |                 |      |
| " 18 ...        | " "  | 39·1            | 39·8 |                 |  |                 |      |
| " 19 ...        | " "  | 39·7            | 40·3 |                 |  |                 |      |
| " 20 ...        | " "  | 39·3            | 39·6 |                 |  |                 |      |
| " 21 ...        | " "  | 39·7            | 40·0 |                 |  |                 |      |
| " 22 ...        | " "  | 39·6            | 40·0 |                 |  |                 |      |
| " 23 ...        | " "  | 39·2            | 40·0 |                 |  |                 |      |
| " 24 ...        | " "  | 39·6            | 39·3 |                 |  |                 |      |
| " 25 ...        | " "  | 39·3            | 39·3 |                 |  |                 |      |
| " 26 ...        | " "  | 39·1            | 39·3 |                 |  |                 |      |
| " 27 ...        | " "  | 39·3            | 39·5 |                 |  |                 |      |
| " 28 ...        | " "  | 39·7            | 40·0 |                 |  |                 |      |
| " 29 ...        | " "  | 39·6            | 39·7 |                 |  |                 |      |
| " 30 ...        | " "  | 39·8            |      |                 |  |                 |      |
|                 | Observations discontinued.<br>Result negative. |                 |      |                 |  |                 |      |



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C.

BANDICOOT SURRA.

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APPENDIX No. I.

INOCULATION OF ANIMALS WITH SOILED BANDICOOT'S  
BLOOD.

RESULTS POSITIVE.

(A).—GUINEA PIG No. I.

RESULTS NEGATIVE.

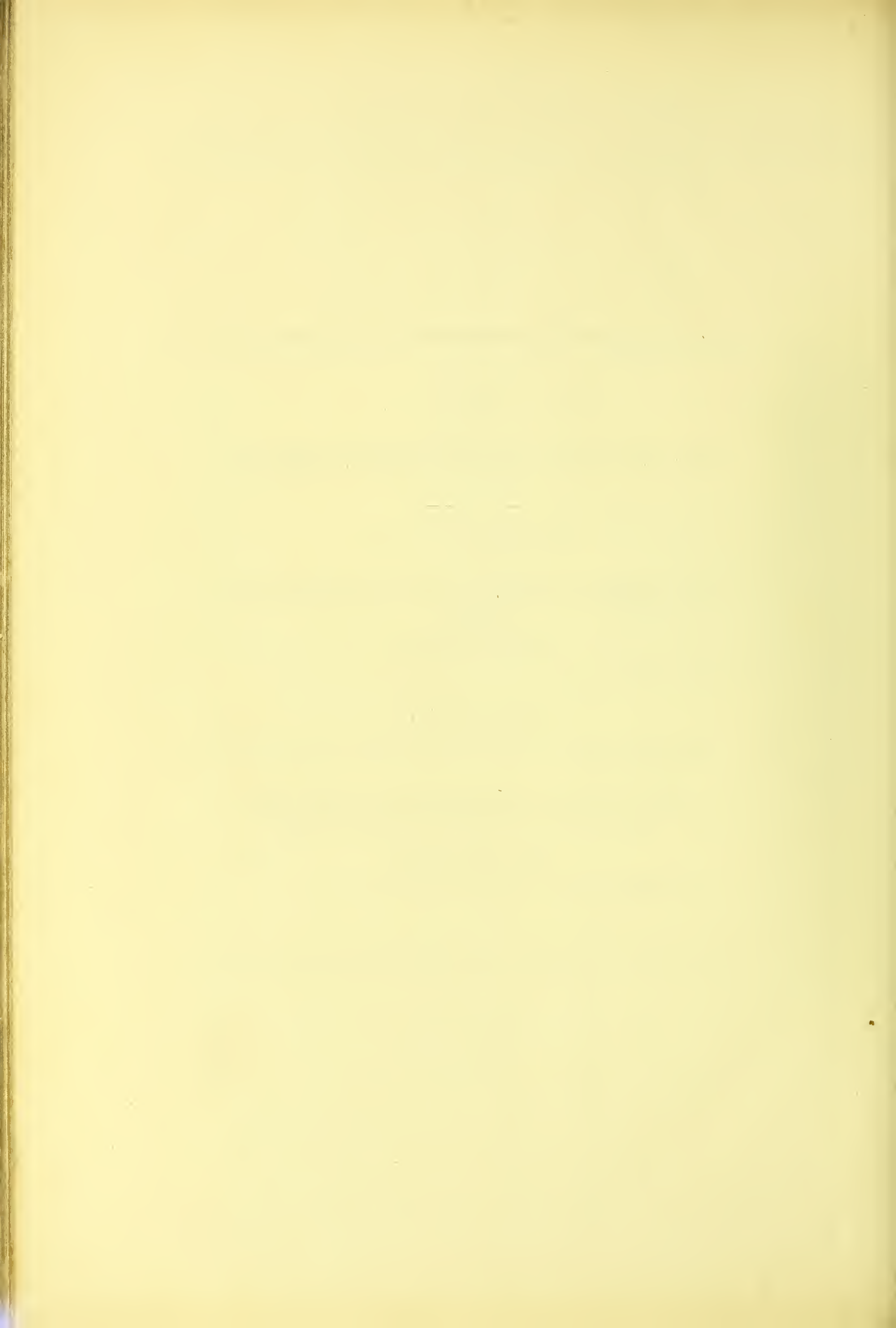
(B).—DONKEY No. IV, MULE No. III (*Fide Précis*). RABBITS Nos. I, II,  
III, IV.

SMALL ANIMALS INOCULATED WITH BLOOD FROM  
BANDICOOT CONTAINING MINUTE SPIRILLA.

RESULTS POSITIVE.

(C).—RABBITS Nos. I, II, III, GUINEA PIGS Nos. I, II.

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## INOCULATION OF ANIMALS WITH SOILED BANDICOOT'S BLOOD.

(A)—Result Positive.

*Guinea Pig I.*—Inoculated with 0·2 c.c. of blood, containing swarms of hæmatozoa, taken from the heart of Bandicoot No. IV immediately after death.

*Guinea Pig I.*

| Date.        | Temperature °C. |      | Condition of Blood. | Date.           | Temperature °C. |      | Condition of Blood. |
|--------------|-----------------|------|---------------------|-----------------|-----------------|------|---------------------|
|              | A.M.            | P.M. |                     |                 | A.M.            | P.M. |                     |
| 1894.        |                 |      |                     | 1894.           |                 |      |                     |
| August 5 ... | ...             | 39·3 | Hæmatozoa Absent.   | August 29 ...   | 38·6            | 39·0 | Hæmatozoa Absent.   |
| " 6 ...      | 39·2            | 39·0 | "                   | " 30 ...        | 28·2            | 39·1 | "                   |
| " 7 ...      | 38·7            | 38·8 | "                   | " 31 ...        | 37·4            | 39·7 | "                   |
| " 8 ...      | 38·8            | 38·8 | "                   | September 1 ... | 38·2            | 39·2 | "                   |
| " 9 ...      | 38·2            | 40·0 | Hæmatozoa Few.      | " 2 ...         | 38·2            | 39·2 | "                   |
| " 10 ...     | 38·6            | 39·2 | "                   | " 3 ...         | 37·8            | 39·4 | "                   |
| " 11 ...     | 38·4            | 39·0 | "                   | " 4 ...         | 38·3            | 39·2 | "                   |
| " 12 ...     | 38·4            | 39·5 | Hæmatozoa Absent.   | " 5 ...         | 37·5            | 39·6 | "                   |
| " 13 ...     | 38·2            | 38·6 | Hæmatozoa Few.      | " 6 ...         | 37·8            | 39·0 | "                   |
| " 14 ...     | 38·8            | 39·4 | Hæmatozoa Absent    | " 7 ...         | 37·6            | 39·4 | "                   |
| " 15 ...     | 39·4            | 39·6 | "                   | " 8 ...         | 37·2            | 39·4 | "                   |
| " 16 ...     | 38·6            | 39·1 | "                   | " 9 ...         | 38·8            | 38·4 | "                   |
| " 17 ...     | 38·1            | 38·6 | "                   | " 10 ...        | 37·6            | 38·6 | "                   |
| " 18 ...     | 37·5            | 40·0 | "                   | " 11 ...        | 37·8            | 38·4 | "                   |
| " 19 ...     | 38·8            | 38·0 | "                   | " 12 ...        | 38·2            | 39·8 | "                   |
| " 20 ...     | 37·8            | 39·6 | "                   | " 13 ...        | 38·0            | 39·0 | "                   |
| " 21 ...     | 37·8            | 38·8 | "                   | " 14 ...        | 37·8            | 38·8 | "                   |
| " 22 ...     | 37·5            | 39·0 | "                   | " 15 ...        | 35·0            | ...  | "                   |
| " 23 ...     | 37·8            | 39·8 | "                   | " 16 ...        | Death at 12-15  | P.M. | "                   |
| " 24 ...     | 37·8            | 39·8 | "                   |                 |                 |      |                     |
| " 25 ...     | 38·2            | 39·8 | "                   |                 |                 |      |                     |
| " 26 ...     | 38·0            | 39·4 | "                   |                 |                 |      |                     |
| " 27 ...     | 37·0            | 38·7 | "                   |                 |                 |      |                     |
| " 28 ...     | 38·2            | 38·8 | "                   |                 |                 |      |                     |

*Autopsy.*—No marked pathological changes. Body weight 194 grammes, spleen weight 0·2 grammes. Ratio of spleen to body weight=1 : 970.

(B)—Results Negative.

*Rabbit I.*—Inoculated with 0·2 c.c. of blood, containing swarms of hæmatozoa taken from the heart of Bandicoot No. IV immediately after death.

*Rabbit I.*

| 1894.        |      |      |                   | 1894.           |      |      |                   |
|--------------|------|------|-------------------|-----------------|------|------|-------------------|
| August 5 ... | ...  | 40·0 | Hæmatozoa Absent. | August 31 ...   | 39·0 | 39·6 | Hæmatozoa Absent. |
| " 6 ...      | 40·0 | 39·4 | "                 | September 1 ... | 39·0 | 39·6 | "                 |
| " 7 ...      | 39·0 | 39·4 | "                 | " 2 ...         | 39·0 | 39·6 | "                 |
| " 8 ...      | 39·0 | 39·5 | "                 | " 3 ...         | 39·0 | 39·8 | "                 |
| " 9 ...      | 38·9 | 39·8 | "                 | " 4 ...         | 39·2 | 39·4 | "                 |
| " 10 ...     | 39·4 | 39·7 | "                 | " 5 ...         | 39·0 | 39·2 | "                 |
| " 11 ...     | 39·0 | 39·8 | "                 | " 6 ...         | 39·1 | 39·5 | "                 |
| " 12 ...     | 39·3 | 39·7 | "                 | " 7 ...         | 38·8 | 39·4 | "                 |
| " 13 ...     | 39·2 | 39·6 | "                 | " 8 ...         | 38·8 | 39·7 | "                 |
| " 14 ...     | 39·0 | 39·8 | "                 | " 9 ...         | 39·2 | 39·6 | "                 |
| " 15 ...     | 39·2 | 39·6 | "                 | " 10 ...        | 39·0 | 39·4 | "                 |
| " 16 ...     | 39·2 | 39·5 | "                 | " 11 ...        | 38·8 | 39·3 | "                 |
| " 17 ...     | 39·2 | 39·5 | "                 | " 12 ...        | 38·9 | 39·2 | "                 |
| " 18 ...     | 39·2 | 39·7 | "                 | " 13 ...        | 38·6 | 39·4 | "                 |
| " 19 ...     | 39·2 | 39·4 | "                 | " 14 ...        | 38·8 | 39·4 | "                 |
| " 20 ...     | 39·1 | 39·8 | "                 | " 15 ...        | 39·1 | 39·2 | "                 |
| " 21 ...     | 39·0 | 39·5 | "                 | " 16 ...        | 38·7 | 39·6 | "                 |
| " 22 ...     | 39·0 | 39·6 | "                 | " 17 ...        | 38·6 | 39·6 | "                 |
| " 23 ...     | 39·0 | 40·0 | "                 | " 18 ...        | 38·7 | 39·5 | "                 |
| " 24 ...     | 39·0 | 39·6 | "                 | " 19 ...        | 38·6 | 39·0 | "                 |
| " 25 ...     | 38·8 | 39·6 | "                 | " 20 ...        | 38·8 | 39·4 | "                 |
| " 26 ...     | 38·4 | 39·6 | "                 | " 21 ...        | 39·0 | 39·2 | "                 |
| " 27 ...     | 38·8 | 39·7 | "                 | " 22 ...        | 38·9 | 39·2 | "                 |
| " 28 ...     | 38·7 | 39·6 | "                 | " 23 ...        | 39·0 | 39·2 | "                 |
| " 29 ...     | 39·2 | 39·6 | "                 |                 |      |      |                   |
| " 30 ...     | 39·2 | 39·3 | "                 |                 |      |      |                   |

The investigation was continued for a further period of 44 days, but no hæmatozoa were observed in the blood.



*Rabbit II.*—Inoculated with 0.4 c.e. of blood (Hæmatozoa absent), taken from the heart of Guinea Pig No. I immediately after death.

*Rabbit II.*

| Date.     |        | Temperature °C. |      | Condition of Blood. | Date.   |        | Temperature °C. |      | Condition of Blood. |
|-----------|--------|-----------------|------|---------------------|---|--------|-----------------|------|---------------------|
|           |        | A.M.            | P.M. |                     |   |        | A.M.            | P.M. |                     |
| 1894.     |        |                 |      |                     | 1894.   |        |                 |      |                     |
| September | 15 ... | ...             | 39.4 | Hæmatozoa Absent.   | October   | 10 ... | 40.2            | 40.0 | Hæmatozoa Absent.   |
| "         | 16 ... | 39.0            | 39.6 | "                   | "   | 11 ... | 39.0            | 39.3 | "                   |
| "         | 17 ... | 39.0            | 40.0 | "                   | "   | 12 ... | 39.0            | 39.6 | "                   |
| "         | 18 ... | 39.4            | 39.4 | "                   | "   | 13 ... | 38.9            | 39.4 | "                   |
| "         | 19 ... | 39.1            | 39.6 | "                   | "   | 14 ... | 39.0            | 39.4 | "                   |
| "         | 20 ... | 39.0            | 39.5 | "                   | "   | 15 ... | 39.0            | 40.0 | "                   |
| "         | 21 ... | 39.2            | 39.7 | "                   | "   | 16 ... | 39.0            | 39.4 | "                   |
| "         | 22 ... | 39.0            | 39.7 | "                   | "   | 17 ... | 38.8            | 40.0 | "                   |
| "         | 23 ... | 39.0            | 39.6 | "                   | "   | 18 ... | 38.8            | 39.4 | "                   |
| "         | 24 ... | 39.0            | 39.4 | "                   | "   | 19 ... | 39.0            | 39.7 | "                   |
| "         | 25 ... | 38.8            | 39.6 | "                   | "   | 20 ... | 39.3            | 39.6 | "                   |
| "         | 26 ... | 39.2            | 39.4 | "                   | "   | 21 ... | 39.0            | 39.8 | "                   |
| "         | 27 ... | 39.4            | 39.8 | "                   | "   | 22 ... | 39.0            | 39.6 | "                   |
| "         | 28 ... | 39.0            | 39.6 | "                   | "   | 23 ... | 39.2            | 39.8 | "                   |
| "         | 29 ... | 39.8            | 39.6 | "                   | "   | 24 ... | 39.2            | 39.2 | "                   |
| "         | 30 ... | 39.2            | 39.6 | "                   | "   | 25 ... | 38.8            | 39.4 | "                   |
| October   | 1 ...  | 38.8            | 39.2 | "                   | "   | 26 ... | 39.2            | 39.6 | "                   |
| "         | 2 ...  | 39.0            | 39.1 | "                   | "   | 27 ... | 38.9            | 39.6 | "                   |
| "         | 3 ...  | 38.8            | 39.6 | "                   | "   | 28 ... | 39.0            | 39.6 | "                   |
| "         | 4 ...  | 38.9            | 39.6 | "                   | "   | 29 ... | 38.8            | 39.6 | "                   |
| "         | 5 ...  | 39.2            | 39.6 | "                   | "   | 30 ... | 38.8            | 40.0 | "                   |
| "         | 6 ...  | 39.2            | 39.4 | "                   | "   | 31 ... | 38.3            | 39.4 | "                   |
| "         | 7 ...  | 39.2            | 39.3 | "                   | The investigation was continued for a further period of 19 days, but no hæmatozoa were observed in the blood. |        |                 |      |                     |
| "         | 8 ...  | 39.0            | 39.4 | "                   |   |        |                 |      |                     |
| "         | 9 ...  | 39.0            | 39.6 | "                   |   |        |                 |      |                     |

*Rabbit III.*—Inoculated with 0.1 c.e. of blood containing swarms of hæmatozoa taken from the heart of Bandicoot No. XIII, immediately after death.

| Date.     | Temperature °C. |      | Hæmatozoa<br>in Blood. | Spirilla<br>in Blood. | Date.   | Temperature °C.   |       | Hæmatozoa<br>in Blood. | Spirilla<br>in Blood. |         |         |
|-----------|-----------------|------|------------------------|-----------------------|---------|---|-------|------------------------|-----------------------|---------|---------|
|           | A.M.            | P.M. |                        |                       |         | A.M.  | P.M.  |                        |                       |         |         |
| 1894.     |                 |      |                        |                       | 1894.   |   |       |                        |                       |         |         |
| August    | 15...           | ...  | 39.4                   | Absent.               | Absent. | September   | 23 .. | 38.8                   | 39.6                  | Absent. | Absent. |
| "         | 16...           | 39.0 | 39.6                   | "                     | "       | "   | 24... | 39.0                   | 38.8                  | "       | "       |
| "         | 17...           | 39.4 | 39.0                   | "                     | "       | "   | 25... | 39.0                   | 39.4                  | "       | "       |
| "         | 18...           | 39.2 | 39.8                   | "                     | "       | "   | 26... | 38.8                   | 39.0                  | "       | "       |
| "         | 19...           | 39.2 | 39.6                   | "                     | "       | "   | 27... | 39.2                   | 39.0                  | "       | "       |
| "         | 20...           | 39.0 | 39.8                   | "                     | "       | "   | 28... | 38.7                   | 39.2                  | "       | "       |
| "         | 21...           | 38.8 | 39.6                   | "                     | "       | "   | 29... | 38.8                   | 39.2                  | "       | "       |
| "         | 22...           | 39.1 | 39.6                   | "                     | "       | "   | 30... | 39.6                   | 39.2                  | "       | "       |
| "         | 23...           | 39.2 | 39.8                   | "                     | "       | October   | 1     | 39.2                   | 39.4                  | "       | "       |
| "         | 24...           | 39.2 | 40.0                   | "                     | "       | "   | 2...  | 39.7                   | 40.0                  | "       | "       |
| "         | 25...           | 39.6 | 39.8                   | "                     | "       | "   | 3...  | 39.2                   | 39.2                  | "       | "       |
| "         | 26...           | 39.2 | 40.2                   | "                     | "       | "   | 4 ..  | 39.0                   | 39.0                  | "       | "       |
| "         | 27..            | 39.6 | 40.2                   | "                     | "       | "   | 5...  | 39.2                   | 39.6                  | "       | "       |
| "         | 28...           | 39.5 | 40.2                   | "                     | "       | "   | 6...  | 38.8                   | 39.5                  | "       | Few.    |
| "         | 29...           | 39.4 | 40.2                   | "                     | "       | "   | 7..   | 39.0                   | 39.2                  | "       | "       |
| "         | 30...           | 40.4 | 40.6                   | "                     | "       | "   | 8...  | 39.0                   | 39.4                  | "       | "       |
| "         | 31..            | 40.2 | 41.2                   | "                     | "       | "   | 9...  | 39.1                   | 39.3                  | "       | Absent. |
| September | 1...            | 40.2 | 40.6                   | "                     | "       | "   | 10... | 39.0                   | 39.8                  | "       | "       |
| "         | 2..             | 40.6 | 40.4                   | "                     | "       | "   | 11... | 39.2                   | 39.6                  | "       | "       |
| "         | 3...            | 39.7 | 40.2                   | "                     | "       | "   | 12... | 39.6                   | 40.2                  | "       | "       |
| "         | 4...            | 40.0 | 40.9                   | "                     | "       | "   | 13... | 39.4                   | 40.0                  | "       | "       |
| "         | 5...            | 39.6 | 40.6                   | "                     | "       | "   | 14... | 39.6                   | 39.6                  | "       | "       |
| "         | 6...            | 40.1 | 40.6                   | "                     | "       | "   | 15... | 39.4                   | 39.8                  | "       | "       |
| "         | 7...            | 39.7 | 40.8                   | "                     | "       | "   | 16... | 39.6                   | 39.6                  | "       | "       |
| "         | 8...            | 39.9 | 40.8                   | "                     | "       | "   | 17... | 39.2                   | 39.8                  | "       | "       |
| "         | 9...            | 39.8 | 40.4                   | "                     | "       | "   | 18... | 39.2                   | 39.8                  | "       | "       |
| "         | 10...           | 39.4 | 41.0                   | "                     | "       | "   | 19... | 39.4                   | 39.4                  | "       | "       |
| "         | 11...           | 40.4 | 40.8                   | "                     | "       | "   | 20... | 39.4                   | 39.8                  | "       | "       |
| "         | 12...           | 40.3 | 41.0                   | "                     | "       | "   | 21... | 39.4                   | 39.4                  | "       | "       |
| "         | 13...           | 39.8 | 40.6                   | "                     | "       | "   | 22... | 39.3                   | 39.8                  | "       | "       |
| "         | 14...           | 39.6 | 41.1                   | "                     | "       | "   | 23... | 39.2                   | 39.5                  | "       | "       |
| "         | 15...           | 40.0 | 40.3                   | "                     | "       | "   | 24... | 39.3                   | 39.4                  | "       | "       |
| "         | 16..            | 38.8 | 40.5                   | "                     | "       | "   | 25... | 39.4                   | 40.2                  | Death.  | ...     |
| "         | 17...           | 39.4 | 40.4                   | "                     | "       | Autopsy—<br>No marked pathological changes.<br>Body weight ... 519 grammes.<br>Spleen " ... 0.6 "<br>Ratio of spleen weight to body weight 1:865. |       |                        |                       |         |         |
| "         | 18...           | 38.9 | 40.4                   | "                     | "       |   |       |                        |                       |         |         |
| "         | 19..            | 39.6 | 39.4                   | "                     | Few.    |   |       |                        |                       |         |         |
| "         | 20...           | 39.4 | 39.7                   | "                     | "       |   |       |                        |                       |         |         |
| "         | 21...           | 38.8 | 39.1                   | "                     | "       |   |       |                        |                       |         |         |
| "         | 22...           | 39.1 | 39.4                   | "                     | Absent. |   |       |                        |                       |         |         |

• *Rabbit IV.*—Inoculated with 0.1 c.c. of blood containing swarms of hæmatozoa taken from the heart of Bandicoot No. XIII, immediately after death.

| Date.     |       | Temperature °C. |      | Hæmatozoa<br>in Blood. | Spirilla<br>in Blood. | Date.  |       | Temperature °C. |                     | Hæmatozoa<br>in Blood. | Spirilla<br>in Blood. |
|-----------|-------|-----------------|------|------------------------|-----------------------|--|-------|-----------------|---------------------|------------------------|-----------------------|
|           |       | A.M.            | P.M. |                        |                       |  |       | A.M.            | P.M.                |                        |                       |
| 1894.     |       |                 |      |                        |                       | 1894.  |       |                 |                     |                        |                       |
| August    | 15... | ...             | 39.4 | Absent.                | Absent.               | September  | 7...  | 39.2            | 40.6                | Absent.                | Absent.               |
| "         | 16... | 38.7            | 39.3 | "                      | "                     | "  | 8...  | 39.0            | 40.5                | "                      | "                     |
| "         | 17... | 39.0            | 39.2 | "                      | "                     | "  | 9...  | 39.6            | 40.1                | "                      | "                     |
| "         | 18... | 38.7            | 39.4 | "                      | "                     | "  | 10... | 39.4            | 40.5                | "                      | "                     |
| "         | 19... | 39.0            | 39.4 | "                      | "                     | "  | 11... | 39.6            | 40.0                | "                      | "                     |
| "         | 20... | 39.0            | 39.4 | "                      | "                     | "  | 12... | 39.2            | 40.4                | "                      | Few.                  |
| "         | 21... | 39.0            | 39.6 | "                      | "                     | "  | 13... | 39.2            | 39.6                | "                      | "                     |
| "         | 22... | 38.8            | 39.7 | "                      | "                     | "  | 14... | 38.8            | 40.6                | "                      | "                     |
| "         | 23... | 39.0            | 39.6 | "                      | "                     | "  | 15... | 39.0            | 39.6                | "                      | "                     |
| "         | 24... | 39.1            | 39.6 | "                      | "                     | "  | 16... | 39.5            | 39.8                | "                      | "                     |
| "         | 25... | 40.2            | 39.7 | "                      | "                     | "  | 17... | 39.4            | 40.0                | "                      | "                     |
| "         | 26... | 39.2            | 39.8 | "                      | "                     | "  | 18... | 39.2            | 39.9                | "                      | "                     |
| "         | 27... | 39.4            | 40.4 | "                      | "                     | "  | 19... | 39.2            | 39.4                | "                      | "                     |
| "         | 28... | 39.2            | 40.0 | "                      | "                     | "  | 20... | 38.8            | 39.8                | "                      | Absent.               |
| "         | 29... | 39.2            | 40.0 | "                      | "                     | "  | 21... | 39.0            | 39.6                | "                      | Few.                  |
| "         | 30... | 39.8            | 41.0 | "                      | Few.                  | "  | 22... | 39.0            | 39.6                | "                      | Absent.               |
| "         | 31... | 39.6            | 41.2 | "                      | "                     | "  | 23... | 38.5            | Death at 11.30 A.M. |                        |                       |
| September | 1...  | 39.8            | 40.4 | "                      | Absent.               | Autopsy—<br>No marked pathological changes.<br>Body weight 409 grammes.<br>Spleen " 1.50 "<br>Ratio of spleen weight to body weight 1:272.7. |       |                 |                     |                        |                       |
| "         | 2...  | 40.2            | 40.0 | "                      | "                     |  |       |                 |                     |                        |                       |
| "         | 3...  | 39.8            | 40.0 | "                      | "                     |  |       |                 |                     |                        |                       |
| "         | 4...  | 39.6            | 40.6 | "                      | "                     |  |       |                 |                     |                        |                       |
| "         | 5...  | 39.6            | 40.7 | "                      | "                     |  |       |                 |                     |                        |                       |
| "         | 6...  | 39.1            | 40.0 | "                      | "                     |  |       |                 |                     |                        |                       |

#### SMALL ANIMALS INOCULATED WITH BLOOD FROM BANDICOOT CONTAINING MINUTE SPIRILLA.

(C)—Results Positive.

*Rabbit I.*—Inoculated with 0.3 c.c. of blood containing no hæmatozoa or spirilla taken from the heart of Bandicoot No. I immediately after death.

| 1894.     |    |     |      |         | 1894.  |    |     |       |               |
|-----------|----|-----|------|---------|--|----|-----|-------|---------------|
| September | 23 | ... | 39.4 | Absent. | October  | 13 | ... | 39.6  | 39.6          |
| "         | 24 | ... | 39.0 | "       | "  | 14 | ... | 38.6  | 39.4          |
| "         | 25 | ... | 40.4 | "       | "  | 15 | ... | 39.7  | 39.4          |
| "         | 26 | ... | 41.2 | "       | "  | 16 | ... | 38.4  | 38.8          |
| "         | 27 | ... | 40.8 | "       | "  | 17 | ... | 38.4  | 39.6          |
| "         | 28 | ... | 40.6 | "       | "  | 18 | ... | 38.2  | 39.0          |
| "         | 29 | ... | 40.3 | "       | "  | 19 | ... | 39.2  | 39.3          |
| "         | 30 | ... | 40.0 | "       | "  | 20 | ... | 38.8  | 39.6          |
| October   | 1  | ... | 39.4 | "       | "  | 21 | ... | 38.8  | 39.8          |
| "         | 2  | ... | 39.2 | "       | "  | 22 | ... | 39.0  | 39.4          |
| "         | 3  | ... | 39.7 | "       | "  | 23 | ... | 38.8  | 39.4          |
| "         | 4  | ... | 40.0 | "       | "  | 24 | ... | 38.6  | 38.8          |
| "         | 5  | ... | 39.2 | "       | "  | 25 | ... | Death | during night. |
| "         | 6  | ... | 39.4 | "       | Autopsy—<br>Spleen much enlarged.<br>Body weight ... 425 grammes.<br>Spleen weight ... 3.90 "<br>Ratio of spleen weight to body weight, 1:100. |    |     |       |               |
| "         | 7  | ... | 39.1 | "       |  |    |     |       |               |
| "         | 8  | ... | 39.4 | "       |  |    |     |       |               |
| "         | 9  | ... | 39.2 | "       |  |    |     |       |               |
| "         | 10 | ... | 39.3 | "       |  |    |     |       |               |
| "         | 11 | ... | 39.7 | "       |  |    |     |       |               |
| "         | 12 | ... | 40.4 | "       |  |    |     |       |               |

*Rabbit II.*—Inoculated with 0·2 c.c. of blood containing no hæmatozoa, but a few spirilla, taken from the heart of Guinea Pig No. I immediately after death, 10th September 1894.

| Date.            | Temperature °C. |      | Hæmatozoa in Blood. | Spirilla in Blood. |
|------------------|-----------------|------|---------------------|--------------------|
|                  | A.M.            | P.M. |                     |                    |
| 1894.            |                 |      |                     |                    |
| September 10 ... | ...             | 39·6 | Absent.             | Absent.            |
| " 11 ...         | 39·0            | 39·6 | "                   | "                  |
| " 12 ...         | 39·6            | 39·9 | "                   | "                  |
| " 13 ...         | 39·0            | 39·8 | "                   | "                  |
| " 14 ...         | 39·3            | 40·6 | "                   | "                  |
| " 15 ...         | 39·9            | 39·4 | "                   | "                  |
| " 16 ...         | 39·2            | 40·0 | "                   | "                  |
| " 17 ...         | 39·4            | 40·0 | "                   | "                  |
| " 18 ...         | 39·2            | 40·2 | "                   | "                  |
| " 19 ...         | 39·6            | 39·2 | "                   | "                  |
| " 20 ...         | 39·6            | 40·8 | "                   | "                  |
| " 21 ...         | 40·4            | 40·4 | "                   | "                  |
| " 22 ...         | 40·4            | 41·2 | "                   | "                  |
| " 23 ...         | 40·7            | 40·7 | "                   | "                  |
| " 24 ...         | 39·8            | 40·2 | "                   | "                  |
| " 25 ...         | 39·6            | 40·4 | "                   | "                  |
| " 26 ...         | 39·4            | 40·0 | "                   | "                  |
| " 27 ...         | 40·0            | 40·4 | "                   | "                  |
| " 28 ...         | 39·4            | 40·2 | "                   | "                  |
| " 29 ...         | 39·1            | 40·6 | "                   | "                  |
| " 30 ...         | 39·1            | 39·8 | "                   | Few.               |
| October 1 ...    | 39·4            | 40·2 | "                   | "                  |
| " 2 ...          | 39·9            | 40·2 | "                   | "                  |
| " 3 ...          | 39·3            | 40·1 | "                   | "                  |
| " 4 ...          | 39·3            | 39·8 | "                   | "                  |
| " 5 ...          | 39·0            | 40·6 | "                   | "                  |
| " 6 ...          | 38·4            | 39·8 | "                   | "                  |
| " 7 ...          | 39·0            | 39·6 | "                   | "                  |
| " 8 ...          | 39·0            | 39·4 | "                   | Absent.            |
| " 9 ...          | 38·9            | 39·2 | "                   | Few.               |
| " 10 ...         | 38·6            | 39·2 | "                   | Absent.            |
| " 11 ...         | 39·0            | 39·8 | "                   | "                  |
| " 12 ...         | 38·6            | 39·6 | "                   | Few.               |
| " 13 ...         | 38·5            | 39·8 | "                   | "                  |
| " 14 ...         | 39·4            | 39·0 | "                   | Absent.            |
| " 15 ...         | 39·2            | 39·6 | "                   | Few.               |
| " 16 ...         | 39·1            | 39·8 | "                   | "                  |
| " 17 ...         | 39·1            | 40·0 | "                   | Absent.            |
| " 18 ...         | 38·6            | 39·8 | "                   | "                  |
| " 19 ...         | 40·0            | 39·4 | "                   | "                  |

Death during night.

*Autopsy*—

No marked pathological changes.

Body weight 491 grammes.

Spleen weight 1·02 "

Ratio of spleen weight to body weight, 1 : 481.

*Rabbit III.*—Inoculated with 0·2 c.c. of blood containing no hæmatozoa but a few spirilla, taken from the heart of Guinea Pig No. I immediately after death, 10th September 1894.

| Date.            | Temperature °C. |      | Hæmatozoa in Blood. | Spirilla in Blood. |
|------------------|-----------------|------|---------------------|--------------------|
|                  | A.M.            | P.M. |                     |                    |
| 1894.            |                 |      |                     |                    |
| September 10 ... | ...             | 39·6 | Absent.             | Absent.            |
| " 11 ...         | 39·4            | 39·6 | "                   | "                  |
| " 12 ...         | 39·1            | 39·8 | "                   | "                  |
| " 13 ...         | 38·8            | 39·6 | "                   | "                  |
| " 14 ...         | 39·4            | 39·8 | "                   | "                  |
| " 15 ...         | 40·3            | 40·0 | "                   | "                  |
| " 16 ...         | 39·7            | 39·7 | "                   | "                  |
| " 17 ...         | 39·8            | 40·8 | "                   | "                  |
| " 18 ...         | 39·0            | 39·8 | "                   | "                  |
| " 19 ...         | 39·6            | 39·6 | "                   | "                  |
| " 20 ...         | 39·3            | 40·0 | "                   | "                  |
| " 21 ...         | 39·6            | 40·2 | "                   | "                  |
| " 22 ...         | 39·6            | 40·4 | "                   | "                  |
| " 23 ...         | 39·8            | 40·2 | "                   | "                  |
| " 24 ...         | 39·4            | 40·2 | "                   | Few.               |
| " 25 ...         | 39·6            | 40·0 | "                   | "                  |
| " 26 ...         | 39·4            | 40·0 | "                   | Absent.            |
| " 27 ...         | 39·2            | 40·0 | "                   | "                  |
| " 28 ...         | 39·2            | 39·7 | "                   | "                  |
| " 29 ...         | 39·0            | 40·1 | "                   | "                  |
| " 30 ...         | 39·3            | 40·0 | "                   | Few.               |
| October 1 ...    | 39·8            | 40·0 | "                   | Absent.            |
| " 2 ...          | 39·8            | 40·6 | "                   | Few.               |
| " 3 ...          | 39·4            | 40·2 | "                   | "                  |
| " 4 ...          | 39·1            | 40·0 | "                   | "                  |
| " 5 ...          | 39·6            | 40·4 | "                   | "                  |
| " 6 ...          | 39·6            | 40·2 | "                   | "                  |
| " 7 ...          | 39·4            | 39·8 | "                   | "                  |
| " 8 ...          | 39·6            | 40·2 | "                   | Absent.            |
| " 9 ...          | 39·0            | 40·0 | "                   | "                  |
| " 10 ...         | 39·0            | 40·0 | "                   | "                  |
| " 11 ...         | 39·4            | 39·6 | "                   | "                  |
| " 12 ...         | 38·8            | 40·0 | "                   | "                  |
| " 13 ...         | 39·0            | 40·6 | "                   | "                  |
| " 14 ...         | 39·2            | 39·4 | "                   | "                  |
| " 15 ...         | 39·2            | 39·6 | "                   | "                  |
| " 16 ...         | 38·8            | 38·6 | "                   | "                  |
| " 17 ...         | 36·1            | ...  | "                   | "                  |

Death at 11·30 A.M.

*Autopsy*—

No marked pathological lesions.

Body weight 576 grammes.

Spleen weight 0·62 "

Ratio of spleen weight to body weight, 1 : 929.



Guinea Pig I.—Inoculated with 0·2 c.c. of blood, containing no hæmatozoa but a few spirilla, taken from the heart of Guinea Pig No. I immediately after death, 10th September 1894.

Guinea Pig II.—Inoculated with 0·1 c.c. of blood containing swarms of hæmatozoa taken from the heart of Bandicoot No. XIII immediately after death.

| Date.     |        | Temperature ° C. |      | Hæmatozoa<br>in Blood. | Spirilla<br>in Blood. | Date.     |       | Temperature °C. |                 | Hæmatozoa<br>in Blood. | Spirilla<br>in Blood. |
|-----------|--------|------------------|------|------------------------|-----------------------|-----------|-------|-----------------|-----------------|------------------------|-----------------------|
|           |        | A.M.             | P.M. |                        |                       |           |       | A.M.            | P.M.            |                        |                       |
| 1894.     |        |                  |      |                        |                       | 1894.     |       |                 |                 |                        |                       |
| September | 10 ... | ...              | 39·2 | Absent.                | Absent.               | August    | 15... | ...             | 39·6            | Absent.                | Absent.               |
| "         | 11 ... | 37·8             | 38·8 | "                      | "                     | "         | 16... | 38·2            | 39·0            | "                      | "                     |
| "         | 12 ... | 38·0             | 39·2 | "                      | "                     | "         | 17... | 37·9            | 38·2            | "                      | "                     |
| "         | 13 ... | 37·6             | 39·7 | "                      | "                     | "         | 18... | 37·9            | 39·0            | "                      | "                     |
| "         | 14 ... | 38·8             | 38·8 | "                      | "                     | "         | 19... | 38·4            | 38·6            | "                      | "                     |
| "         | 15 ... | 39·0             | 39·0 | "                      | "                     | "         | 20... | 38·0            | 39·2            | "                      | "                     |
| "         | 16 ... | 39·3             | 39·1 | "                      | "                     | "         | 21..  | 37·9            | 38·8            | "                      | "                     |
| "         | 17 ... | 38·8             | 39·4 | "                      | "                     | "         | 22... | 37·8            | 39·4            | "                      | "                     |
| "         | 18 ... | 38·8             | 39·6 | "                      | "                     | "         | 23... | 37·6            | 39·4            | "                      | "                     |
| "         | 19 ... | 39·0             | 39·2 | "                      | "                     | "         | 24... | 37·4            | 39·1            | "                      | "                     |
| "         | 20 ... | 39·3             | 39·6 | "                      | "                     | "         | 25..  | 38·0            | 39·4            | "                      | "                     |
| "         | 21 ... | 39·2             | 39·6 | "                      | "                     | "         | 26... | 37·6            | 40·0            | "                      | "                     |
| "         | 22 ... | 39·2             | 40·0 | "                      | "                     | "         | 27... | 38·8            | 40·0            | "                      | "                     |
| "         | 23 ... | 39·3             | 39·6 | "                      | "                     | "         | 28... | 38·9            | 39·4            | "                      | "                     |
| "         | 24 ... | 39·2             | 39·8 | "                      | "                     | "         | 29... | 38·4            | 38·2            | "                      | "                     |
| "         | 25 ... | 39·0             | 39·5 | "                      | "                     | "         | 30... | 39·5            | 39·6            | "                      | "                     |
| "         | 26 ... | 39·0             | 39·5 | "                      | "                     | "         | 31... | 37·7            | 40·2            | "                      | "                     |
| "         | 27 ... | 38·8             | 39·2 | "                      | "                     | September | 1...  | 38·8            | 39·6            | "                      | "                     |
| "         | 28 ... | 38·4             | 39·2 | "                      | "                     | "         | 2...  | 39·5            | 39·7            | "                      | "                     |
| "         | 29 ... | 38·9             | 39·2 | "                      | "                     | "         | 3...  | 39·2            | 39·5            | "                      | "                     |
| "         | 30 ... | 37·8             | 38·6 | "                      | "                     | "         | 4...  | 38·9            | 39·4            | "                      | "                     |
| October   | 1 ...  | 36·9             | 39·0 | "                      | "                     | "         | 5...  | 39·0            | 39·8            | "                      | "                     |
| "         | 2 ...  | 37·0             | 39·0 | "                      | "                     | "         | 6...  | 38·8            | 39·4            | "                      | "                     |
| "         | 3 ...  | 35·0             | ...  | "                      | Few.                  | "         | 7...  | 38·8            | 39·6            | "                      | "                     |
|           |        |                  |      |                        |                       | "         | 8..   | 38·4            | 39·3            | "                      | "                     |
|           |        |                  |      |                        |                       | "         | 9...  | 38·6            | 38·0            | "                      | "                     |
|           |        |                  |      |                        |                       | "         | 10... | 35·4            | Death at 1 P.M. | "                      | Few.                  |

Death at 11-20 A.M.

Autopsy—

No marked pathological lesions.

Body weight 352 grammes.

Spleen weight 0·76

Ratio of spleen weight to body weight, 1 : 463·2.

Death at 11-20 A.M.

Autopsy—

No marked pathological lesions.

Body weight 352 grammes.

Spleen weight 0·76 "

Ratio of spleen weight to body weight, 1 : 463·2.



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D.  
DOG SURRA

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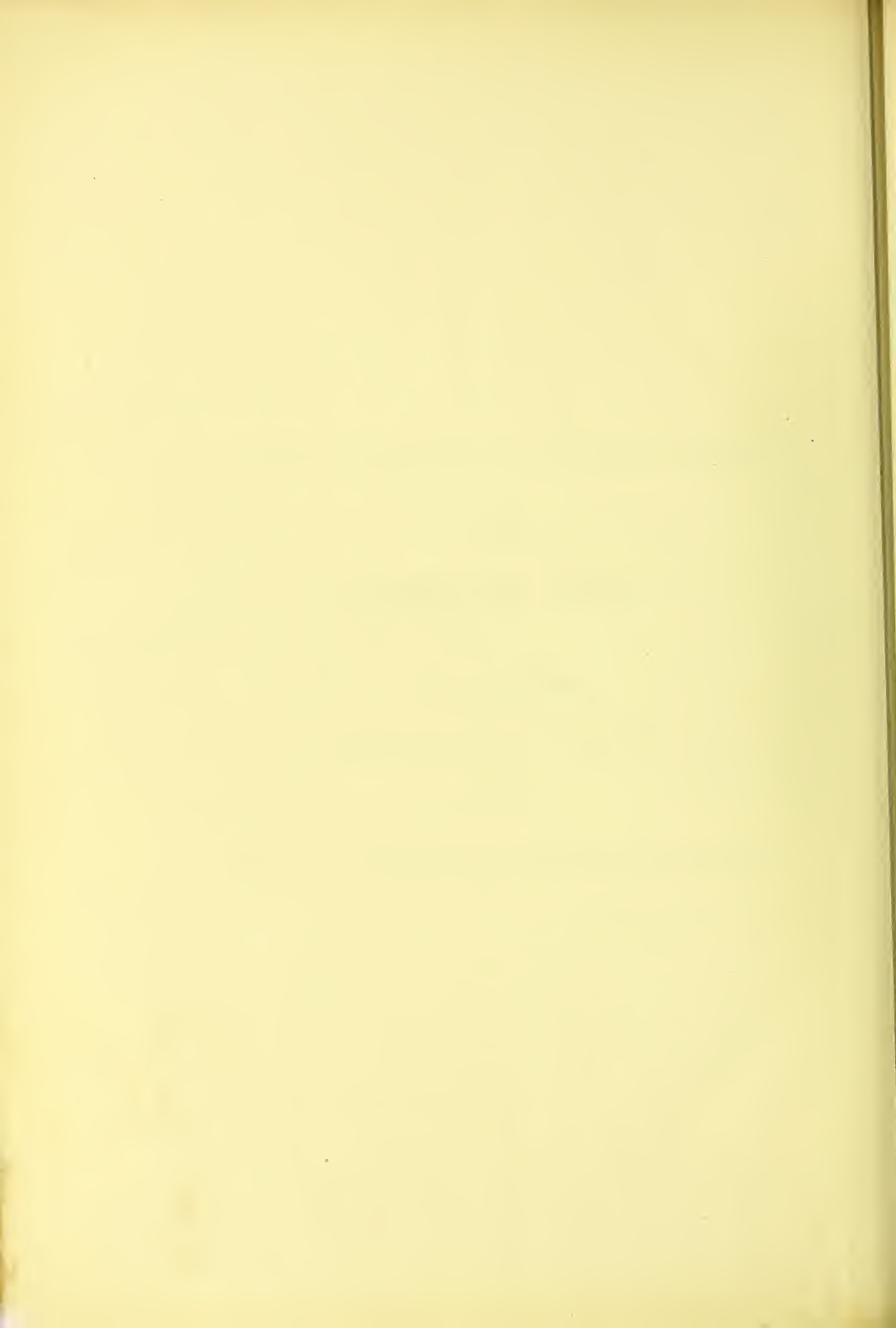
APPENDIX I.

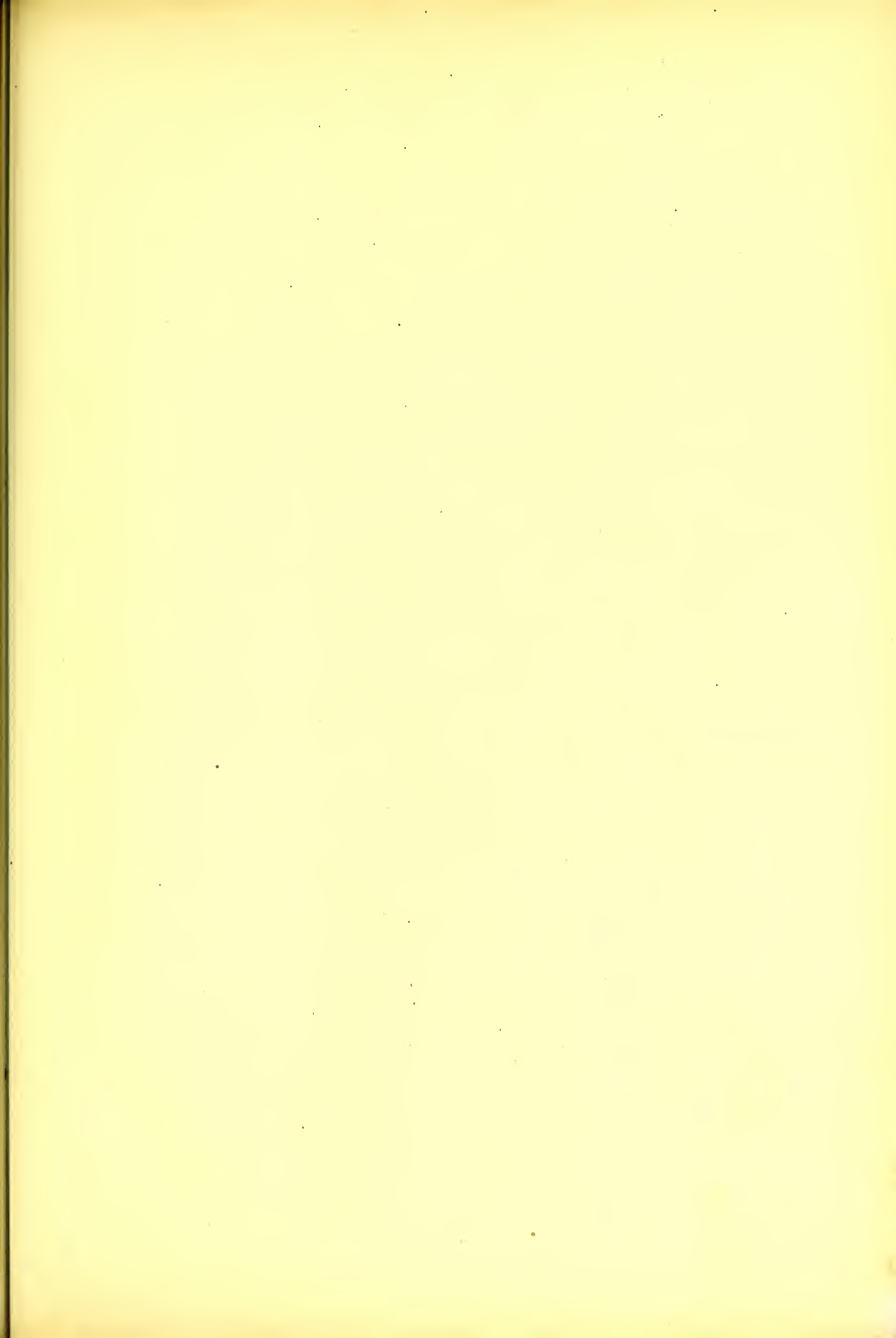
NATURALLY CONTRACTED CASES.

Dog No. VI.

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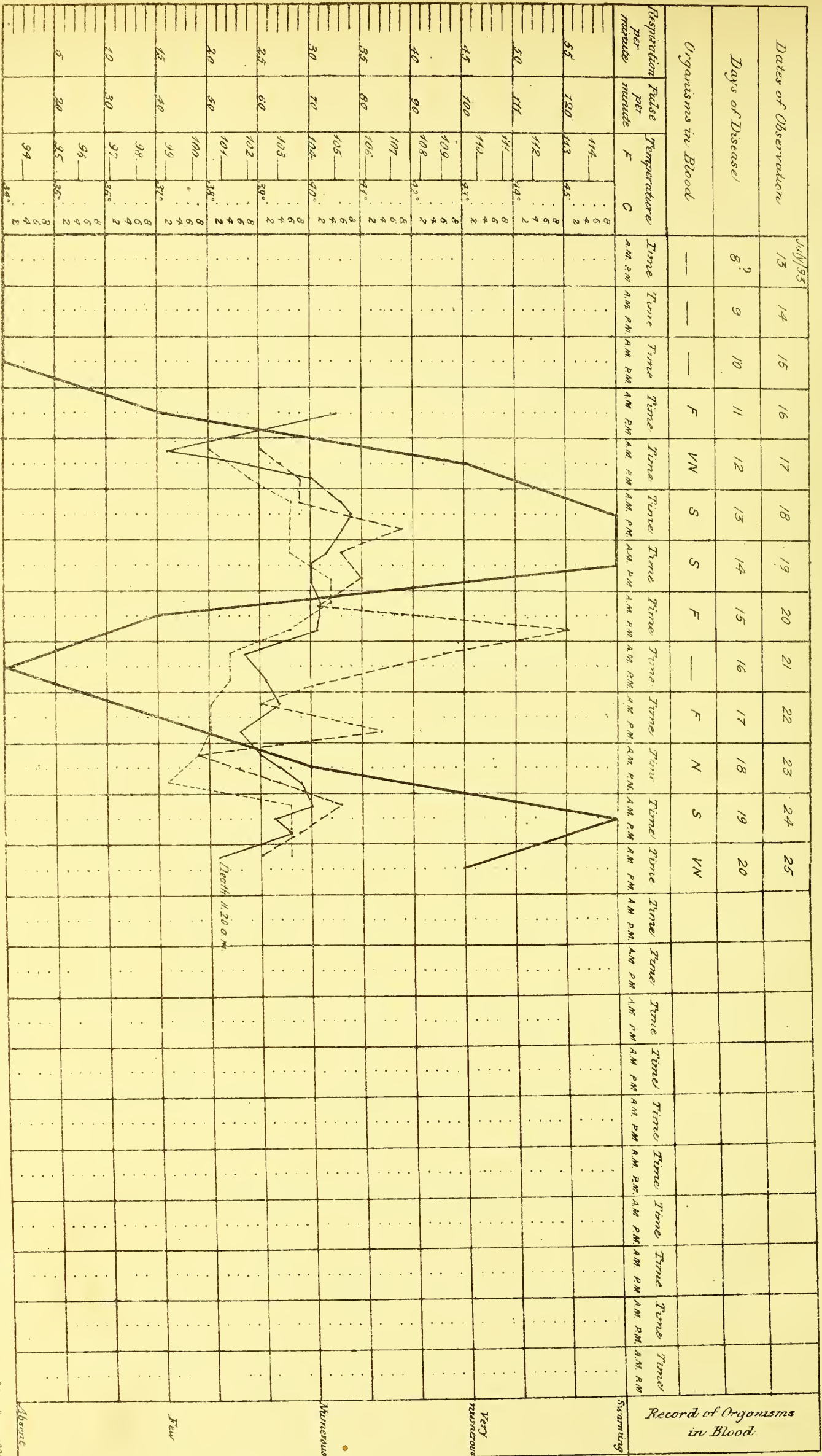






RECORDS OF TEMPERATURE, PULSE AND RESPIRATION.

Dog No. II. (Fox Terrier) \_\_\_\_\_ Age, 2 years. Sex, Bitch. \_\_\_\_\_ Colour, white.  
Disease "Sarva" naturally contracted. \_\_\_\_\_ Date of Attack, 6, 7, 93. \_\_\_\_\_ Result, Death. \_\_\_\_\_ Date of Result, 25, 7, 93. Register No. II \_\_\_\_\_ Word \_\_\_\_\_



Drawn with Graph Plotting Machine, 1909



## DOG SURRA.

## APPENDIX I.

This disease in dogs was unrecognized as Surra until the outbreak of 1893. The first records of heavy mortality in imported Fox Hounds are those of the Ootacamund Kennels in 1869-70. From 1870—1883 there was no mortality in the Madras packs. But in 1884 fourteen couples succumbed to symptoms similar to those described as attacking the Bombay hounds, viz., paroxysmal fever, &c.

On the 11th November 1892 a pack of fresh English Hounds arrived in Bombay, and were placed in Kennels some ten miles out of the city. The first animal was taken ill on December 11th, 1892, and died on the 10th January 1893; and some twenty succumbed during the three months following.

In 1893 I found several fox terriers suffering from Surra at Bandora, Bombay; all these animals had been very carefully looked after, food being specially prepared for them daily.

During 1893 many dogs were destroyed in Mandalay on account of Surra according to Veterinary-Captain G. H. Evans, and Veterinary-Captain H. T. Pease recorded the fact that many of the villages in the Karnal District, Punjab, lost—in addition to equines—a great number of their dogs from this disease. For some villages there were scarcely any remaining. The canines appear to have contracted the malady through eating diseased carcasses.

*Dog No. VI.*—(Fox Terrier) Surra naturally contracted. This animal was sent to the Veterinary College, Bombay, on the 13th July 1893. On the 15th and 16th the Surra hæmatozoon was observed in the blood, on microscopical examination. On the evening of the 16th the animal was sent to Poona and admitted at the Laboratory on the morning of the 17th.

| Month and Date. |      |     | Temperature° C. |        |        | Pulse. |      | Respiration. |      | Hæmatozoa in Blood. |
|-----------------|------|-----|-----------------|--------|--------|--------|------|--------------|------|---------------------|
|                 |      |     | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                     |
| 1893.           |      |     |                 |        |        |        |      |              |      |                     |
| July            | 17th | ... | 37.2            | 38.6   | 40.0   | ...    | 68   | ...          | 24   | Very numerous.      |
| "               | 18th | ... | 40.6            | 40.8   | 40.6   | 68     | 88   | 28           | 28   | Swarming.           |
| "               | 19th | ... | 40.3            | 40.0   | 40.0   | 76     | 80   | 28           | 32   | "                   |
| "               | 20th | ... | 40.2            | ...    | 40.1   | 72     | 120  | 32           | 28   | Few.                |
| "               | 21st | ... | 38.7            | ...    | 39.2   | 96     | ...  | 22           | 22   | Absent.             |
| "               | 22nd | ... | 39.4            | ...    | 38.6   | 60     | 84   | 20           | 20   | Few.                |
| "               | 23rd | ... | 39.0            | 39.4   | 39.8   | 48     | 64   | 20           | 16   | Numerous.           |
| "               | 24th | ... | 40.0            | 39.3   | 39.6   | 76     | 68   | 28           | 28   | Swarming.           |
| "               | 25th | ... | 38.2            | ...    | ...    | 60     | ...  | 28           | ..   | Very numerous.      |

Death at 11-20 A.M.

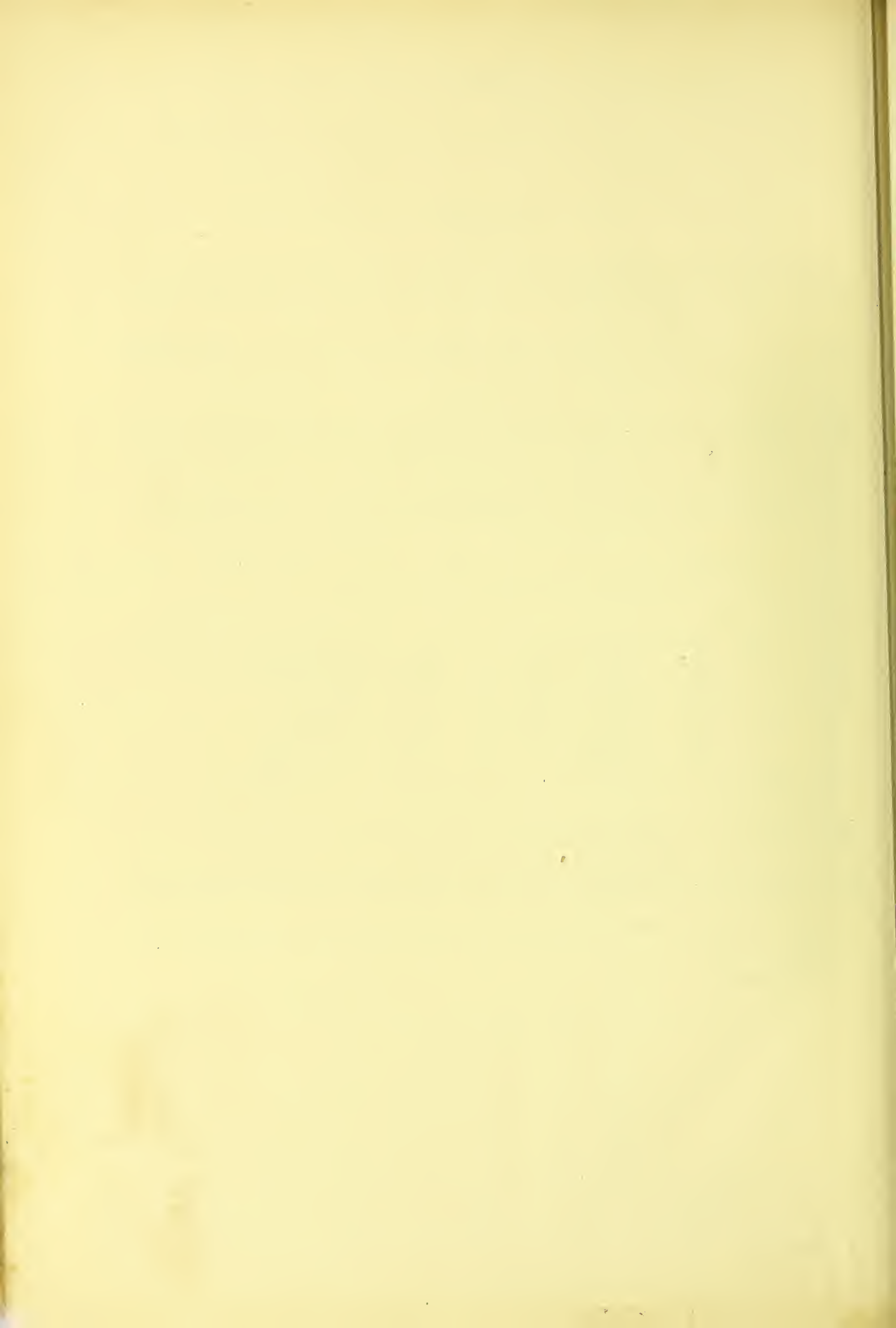
*Autopsy.* Immediately after death.—Body well nourished, œdema of the under-surface of the abdomen and to a slighter degree of the extremities. Body weight 3,738.25 grammes.

*Thorax.*—No fluid or adhesions of pleuræ. *Lungs* well distended with air, surfaces petechiated. *Heart* weighs 46 grammes. No sub-endocardial petechiæ present. Cavity of peritoneum free from fluid. *Liver* presents a healthy appearance. *Spleen* weighs 65 grammes, is considerably enlarged. Ratio of spleen to body weight, 1 : 57.5. Surface petechiated. Tissues on section somewhat soft.

*Kidneys.*—Right weighs 16 grammes, left 18 grammes. The capsules strip easily, surfaces of both organs petechiated.

*Stomach* } —Healthy.  
*Intestines* }

*Bladder.*—Healthy.



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D.  
DOG SURRA

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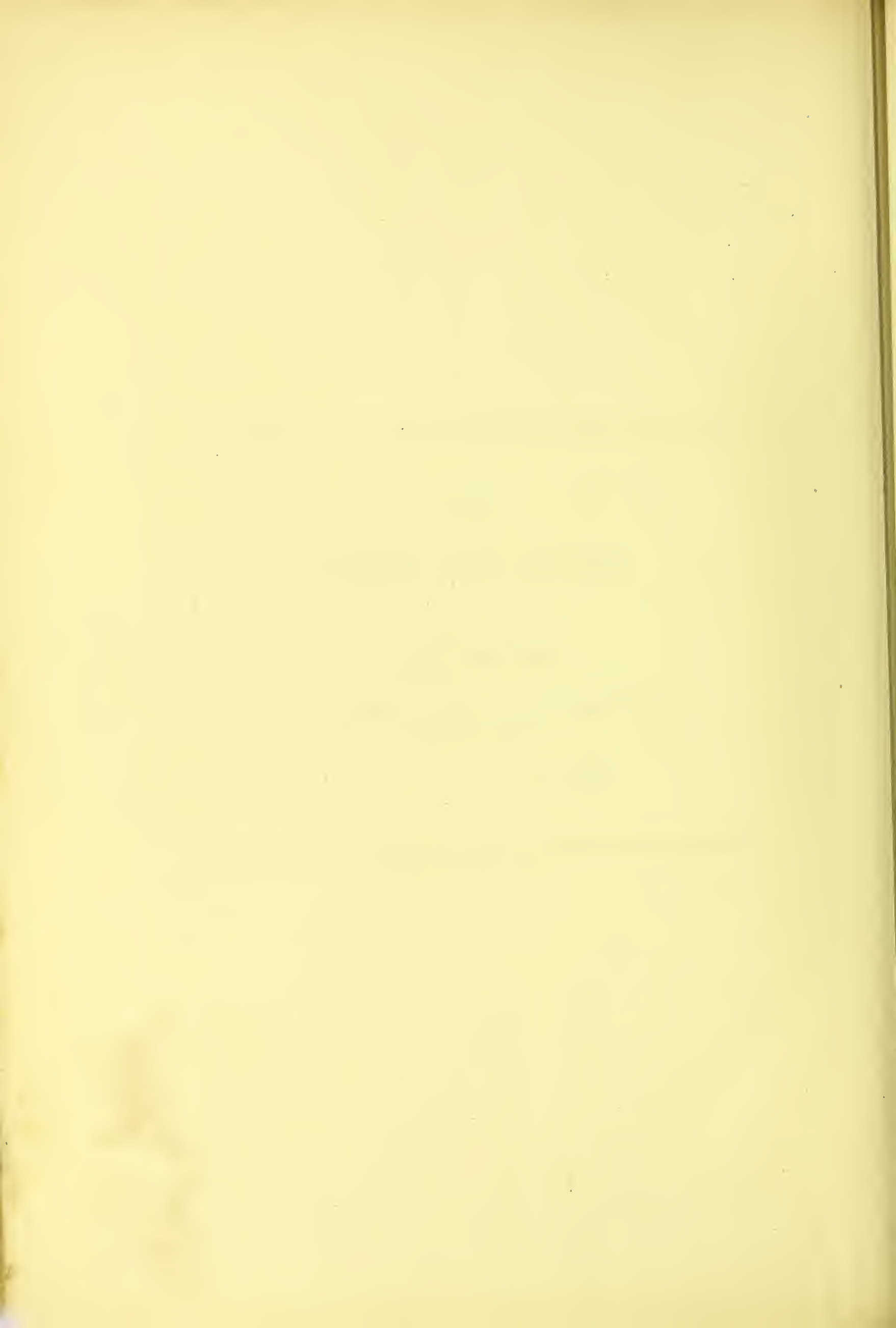
APPENDIX II.

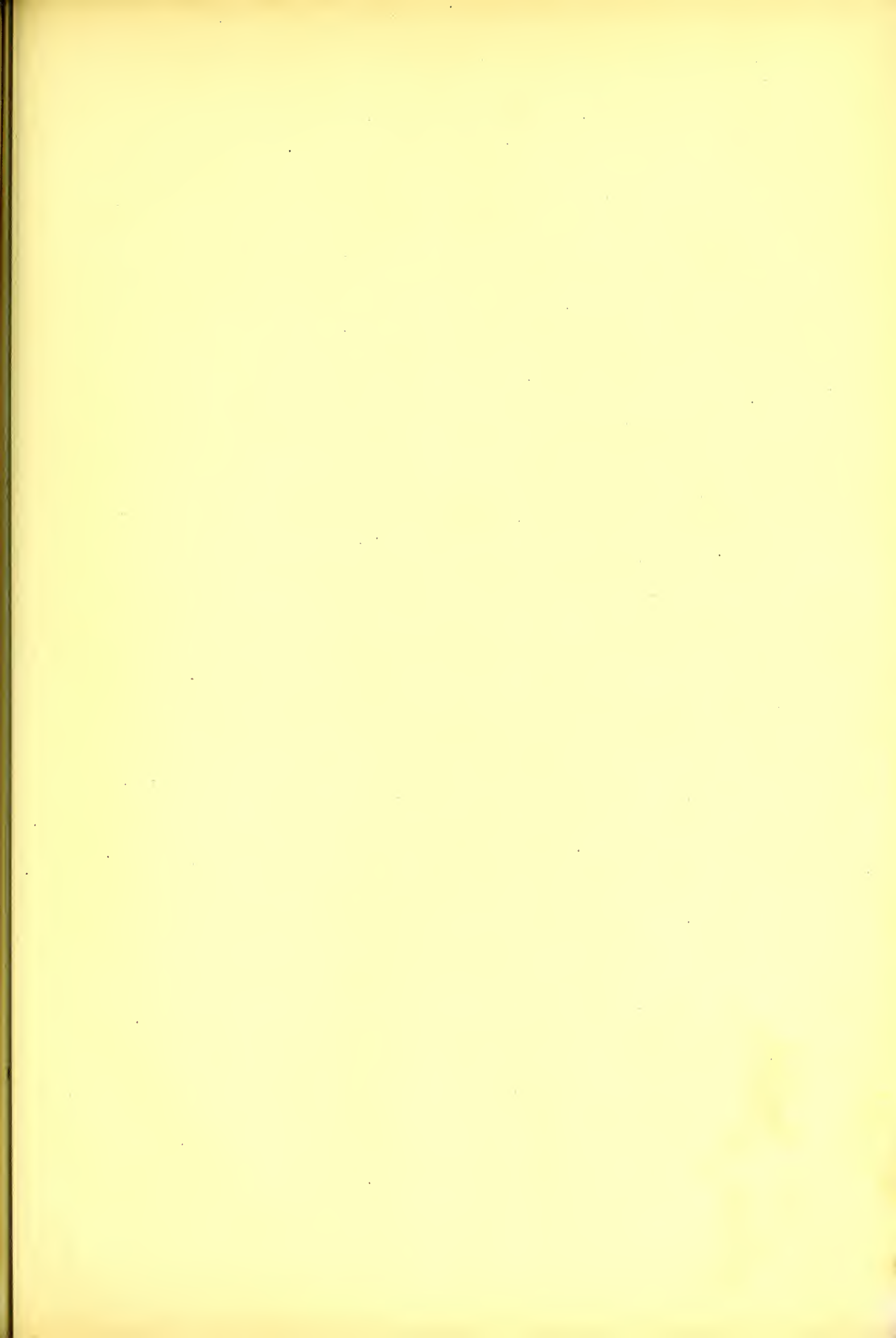
INOCULATION OF ANIMALS WITH SOILED  
DOG'S BLOOD:

HORSE No. XCIII, GUINEA PIGS Nos. I, II.

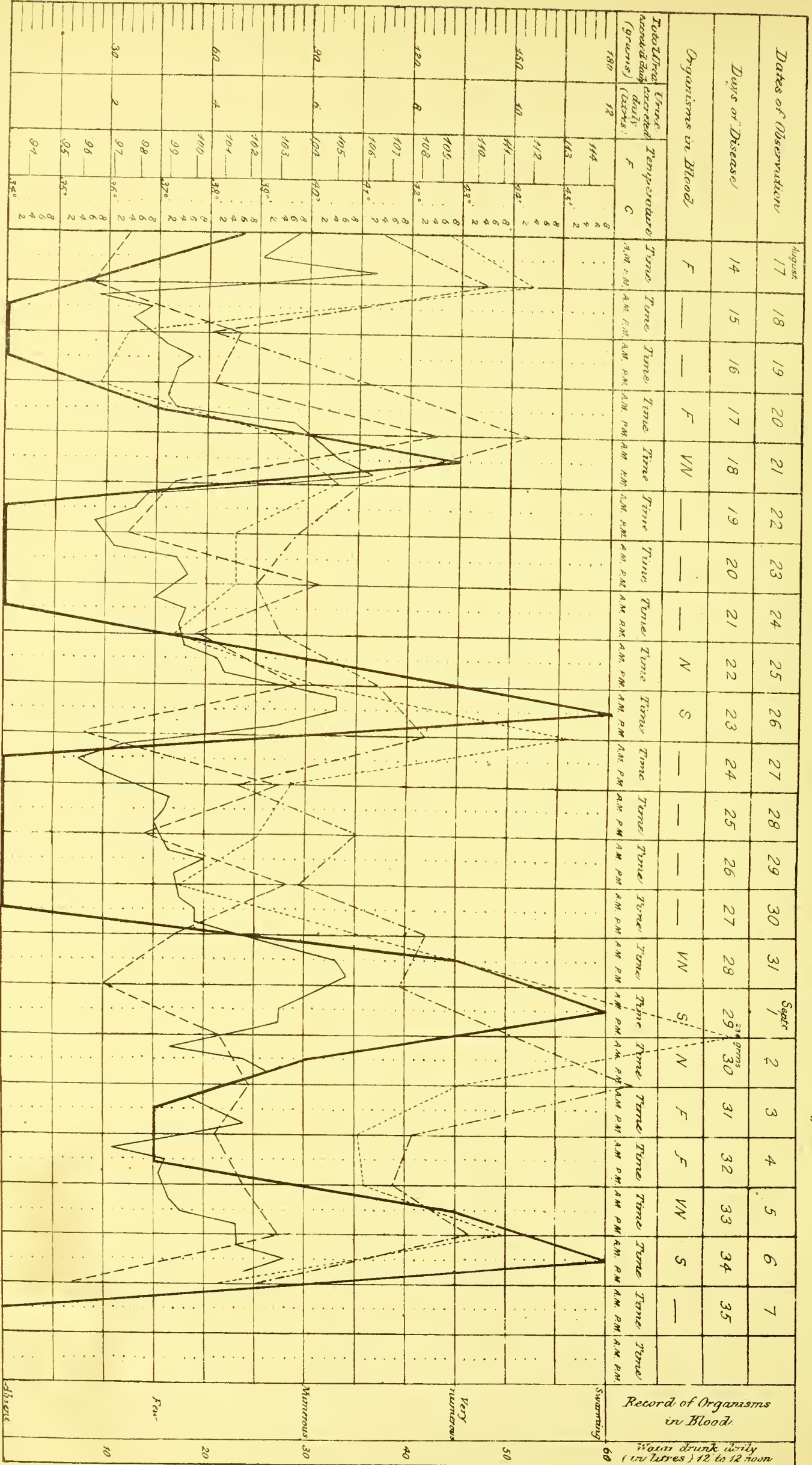
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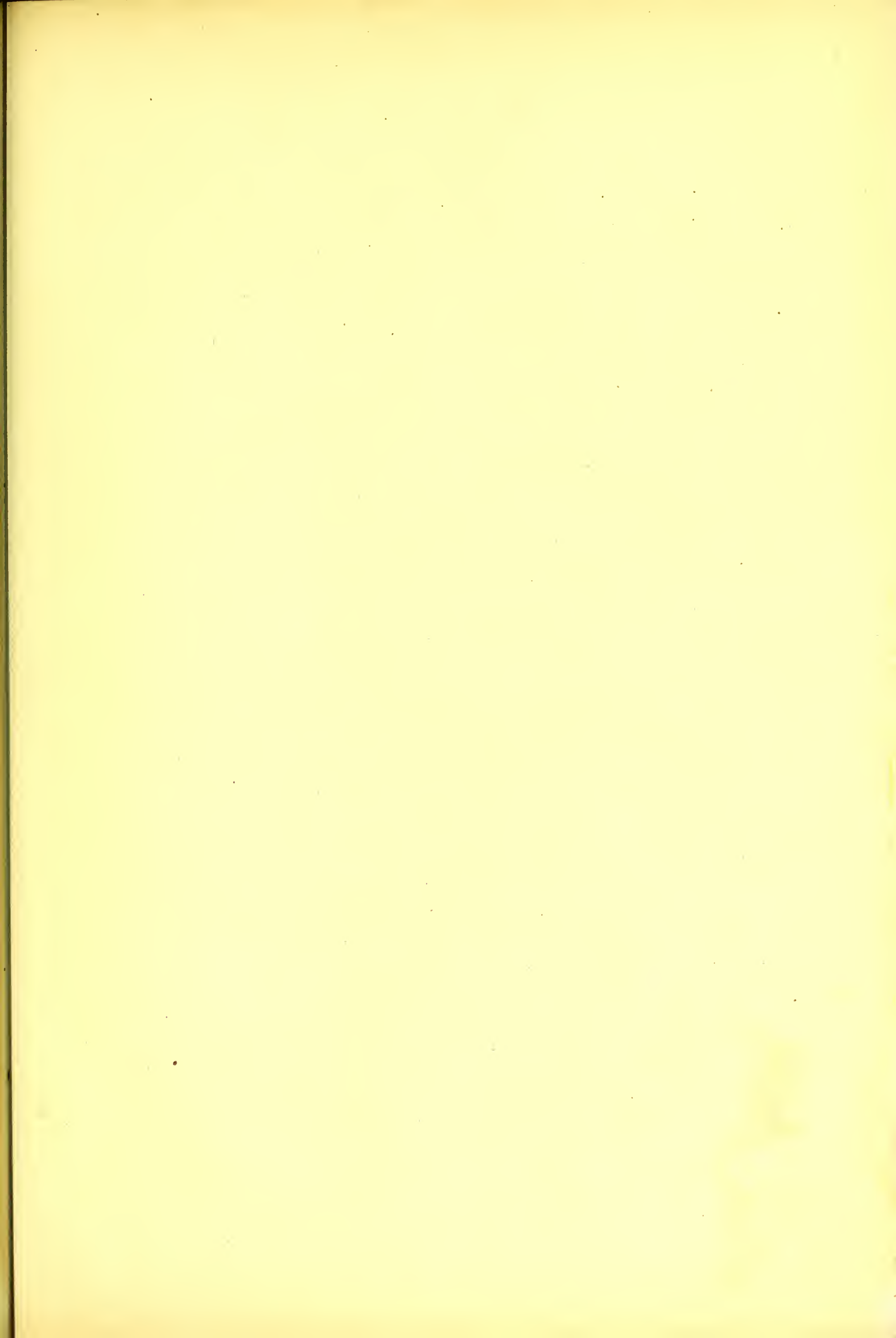


Australian. inoculated from Dog II (Disease naturally acquired) \_\_\_\_\_ Age 7 \_\_\_\_\_ Sex/Gelding \_\_\_\_\_ Colour Bay \_\_\_\_\_  
Disease "Surra" (Inoculated) \_\_\_\_\_ Date of inoculation. 25-7-93. \_\_\_\_\_ Result. Death \_\_\_\_\_ Date of Result. 7-9-93 \_\_\_\_\_ Register No. XCIII \_\_\_\_\_ Ward \_\_\_\_\_



Death of 4 A M 7 9 93  
Drawn at Linn. Govt. Pharm. Office, Perth 839





*NOE SUBRA*

Disease "Surra" (inoculated) \_\_\_\_\_ Date of inoculation, 25-7-93 \_\_\_\_\_ Result Death \_\_\_\_\_ Date of Result, 7-9-93 \_\_\_\_\_ Register No XCIII \_\_\_\_\_ Ward \_\_\_\_\_

[illegible]

Drawn & Co's Photocopy Office, London 1894

## HORSE No. XCIII.

*Bay Australian Gelding, aged, lame, otherwise healthy and in good condition.*

| Date.        | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in the Blood. | REMARKS.  |
|--------------|-----------------|--------|--------|--------|------|--------------|------|-----------------|-------------------------|---|
|              | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                         |   |
| 1893.        |                 |        |        |        |      |              |      |                 |                         |   |
| July 25 ...  | ...             | ...    | 37.2   | ...    | 36   | ...          | 12   | ...             | Inoculated.             | 25th.—Inoculated over left scapular region with 1.0 c. c. of blood containing very numerous hæmatozoa taken from Dog No. II one and half hours after death. |
| " 26 ..      | 36.6            | 37.8   | 37.6   | 36     | 36   | 12           | 24   | ...             | Absent ...              |   |
| " 27 ...     | 37.4            | 38.2   | 38.0   | 40     | 40   | 16           | 20   | ...             | " ...                   | 27th.—Slight swelling at the seat of inoculation; tender on manipulation.   |
| " 28 ...     | 37.2            | 38.0   | 37.8   | 40     | 44   | 20           | 16   | ...             | " ...                   |   |
| " 29 ...     | 37.6            | 38.0   | 37.7   | 40     | 36   | 28           | 16   | ...             | " ...                   | 23th.—Swelling increased and tender.  |
| " 30 ...     | 37.0            | 37.8   | 37.9   | 32     | 32   | 12           | 24   | ...             | " ...                   | 30th.—Swelling further increased and hard to the touch.   |
| " 31 ...     | 38.8            | 39.4   | 40.0   | 40     | 56   | 12           | 24   | ...             | " ...                   |   |
| August 1 ... | 40.6            | 41.2   | 40.2   | 48     | 64   | 16           | 28   | ...             | " ...                   | 1st —Swelling somewhat diminished in size.  |
| " 2 ...      | 37.4            | 37.8   | 37.4   | 44     | 36   | 12           | 20   | ...             | " ...                   | 2nd.— Do. do.   |
| " 3 ...      | 37.0            | 37.6   | 37.0   | 36     | 32   | 12           | 14   | ...             | " ...                   | 3rd.—Swelling decreasing in size and hard; and animal losing flesh.   |
| " 4 ...      | 37.2            | 37.8   | 38.0   | 40     | 48   | 16           | 16   | 1               | Few ...                 | 4th.—Swelling further decreased and slightly tender on compression.   |
| " 5 ...      | 38.8            | 40.2   | 41.0   | 44     | 84   | 12           | 24   | 2               | Numerous.               | 5th.—Swelling entirely disappeared. Urticarial eruption inside the left thigh.  |
| " 6 ...      | 41.0            | 41.0   | 40.5   | 76     | 64   | 24           | 28   | 3               | Absent ...              | 6th.—General condition unchanged. Left conjunctivæ slightly petechiated.  |
| " 7 ...      | 37.0            | 37.2   | 37.2   | 36     | 38   | 12           | 24   | 4               | " ...                   |   |
| " 8 ...      | 37.0            | 37.2   | 37.0   | 40     | 32   | 12           | 12   | 5               | " ...                   | 8th.—Animal dull, conjunctivæ clear.  |
| " 9 ...      | 37.2            | 37.5   | 37.6   | 40     | 40   | 12           | 12   | 6               | Few ...                 |   |
| " 10 ...     | 39.0            | 41.0   | 41.7   | 44     | 80   | 16           | 28   | 7               | Very numerous.          | 10th.—Left conjunctivæ slightly petechiated. Urticarial eruption has spread over the thighs.  |
| " 11 ...     | 39.8            | 38.4   | 39.6   | 52     | 76   | 32           | 28   | 8               | Absent ...              | 11th.—Both conjunctivæ petechiated and yellow. Urticarial eruption unchanged.   |
| " 12 ...     | 37.2            | 37.0   | 38.4   | 44     | 48   | 16           | 20   | 9               | " ...                   |   |
| " 13 ...     | 37.3            | 37.8   | 37.8   | 48     | 48   | 16           | 20   | 10              | " ...                   | 13th.—Right conjunctiva much extravasated; left, a few petechiæ. Urticarial eruption disappearing.  |
| " 14 ...     | 37.0            | 38.1   | 40.6   | 36     | 52   | 16           | 16   | 11              | Few ...                 | 14th.—Urticarial eruption almost disappearing.  |
| " 15 ...     | 39.6            | 38.8   | 37.4   | 52     | 60   | 24           | 12   | 12              | " ...                   | 15th.— Do. do.  |
| " 16 ...     | 37.2            | 38.2   | 40.0   | 52     | 72   | 12           | 12   | 13              | Numerous.               |   |
| " 17 ...     | 39.4            | 39.1   | 41.3   | 68     | 76   | 20           | 24   | 14              | " ...                   |   |
| " 18 ...     | 35.8            | 36.9   | 36.6   | 36     | 42   | 28           | 22   | 15              | Few ...                 | 18th.—Animal somewhat dull; both conjunctivæ still petechiated.   |
| " 19 ...     | 37.1            | 37.6   | 37.4   | 48     | 52   | 12           | 12   | 16              | Absent ...              | 19th.—Animal much brighter.   |
| " 20 ...     | 37.2            | 37.4   | 39.6   | 40     | 52   | 16           | 16   | 17              | " ...                   | 20th.—Animal again dull; both conjunctivæ congested.  |
| " 21 ...     | 40.2            | 40.6   | 41.3   | 64     | 80   | 20           | 32   | 18              | Few ...                 |   |
| " 22 ...     | 36.8            | 36.6   | 35.8   | 64     | 56   | 20           | 16   | 19              | Very numerous.          | 22nd.—Left conjunctiva petechiated. Right, clear.   |
| " 23 ...     | 36.2            | 37.4   | 37.6   | 40     | 48   | 16           | 20   | 20              | Absent ...              |   |
| " 24 ...     | 37.0            | 37.5   | 37.4   | 48     | 48   | 24           | 16   | 21              | " ...                   |   |
| " 25 ...     | 37.6            | 38.2   | 38.4   | 40     | 52   | 24           | 32   | 22              | " ...                   | 25th.—Rectum remains open.  |
| " 26 ...     | 40.6            | 40.6   | 39.5   | 80     | 76   | 20           | 24   | 23              | Numerous.               | 26th.—Both conjunctivæ petechiated.   |
| " 27 ...     | 36.4            | 35.5   | 36.0   | 60     | 48   | 24           | 16   | 24              | Swarming.               |   |
| " 28 ...     | 37.2            | 37.2   | 37.0   | 36     | 48   | 20           | 16   | 25              | Absent ...              | 28th.—Animal has a brighter appearance.   |



| Date.         | Temperature °C. |        |        | Pulse. |      | Respiration. |      | Day of Disease. | Hæmatozoa in the Blood. | REMARKS.   |
|---------------|-----------------|--------|--------|--------|------|--------------|------|-----------------|-------------------------|--|
|               | A.M.            | 1 P.M. | 5 P.M. | A.M.   | P.M. | A.M.         | P.M. |                 |                         |  |
| 1893.         |                 |        |        |        |      |              |      |                 |                         |  |
| August 29...  | 37.3            | 38.0   | 37.4   | 44     | 52   | 16           | 20   | 26              | Absent ...              | 29th.—Animal gradually losing flesh.   |
| „ 30...       | 37.5            | 37.7   | 37.8   | 48     | 54   | 16           | 18   | 27              | „ ...                   | 30th.—Some swelling and œdema beneath the abdomen.   |
| „ 31...       | 39.6            | 40.5   | 40.8   | 68     | 72   | 14           | 28   | 28              | Very numerous.          |  |
| September 1 . | 39.8            | 39.5   | 39.5   | 64     | 64   | 16           | 28   | 29              | „ ...                   | 1st.—Swelling beneath the abdomen has increased, conjunctivæ yellow but free from petechiæ.        |
| „ 2...        | 37.3            | 38.8   | 39.3   | 52     | 64   | 20           | 16   | 30              | Numerous.               | 2nd.—Swelling has disappeared.   |
| „ 3...        | 37.7            | 38.1   | 38.8   | 44     | 52   | 16           | 20   | 31              | Few ...                 | 3rd.—Animal gradually losing flesh, conjunctivæ pale in colour.                                    |
| „ 4...        | 36.3            | 37.2   | 37.1   | 36     | 44   | 12           | 12   | 32              | „ ...                   | 4th.—Swelling and œdema again present beneath the abdomen, conjunctivæ pale and petechiated.       |
| „ 5...        | 37.3            | 37.5   | 38.6   | 44     | 52   | 12           | 28   | 33              | Very numerous.          |  |
| „ 6...        | 38.6            | 39.6   | 38.8   | 64     | 68   | 48           | 36   | 34              | Swarming.               | 6th.—Animal very weak. Swelling has increased; the hind limbs are also swollen; conjunctivæ clear. |
| „ 7...        | ...             | ...    |        |        |      |              |      | 35              | Absent ...              | 7th.—Animal died 4 A.M.  |

*Autopsy.*—The body is somewhat emaciated, the subcutaneous tissues are of a bright yellow colour.

*Thorax*—

*Lungs.*—Both surfaces are petechiated.

*The pleural Cavities.*—Each contain about 2 pints of a reddish coloured fluid, feebly alkaline in reaction.

*Heart.*—Weighs 8 lbs. 14½ ozs. There is a considerable amount of orange coloured material, jelly-like in character surrounding the base of the organ.

*Right Auricle.*—One extravasation near the muscoli-papillares.

*Right Ventricle.*—Wall blood-stained.

*Left Auricle.*—Normal in appearance.

*Left Ventricle.*—Several small sub-endocardial extravasations.

*Abdominal Cavity.*—Contains about 2 pints of a pale coloured fluid.

*Liver.*—Weighs 13 lbs. 15½ ozs. The right lobe is covered with numerous spots. *On section*, the tissues are firm, but appear healthy.

*Spleen.*—Much enlarged, weight 4 lbs. 1½ ozs. Both surfaces are dotted over with numerous, small, purple and bright-red coloured petechiæ. *On section*, the tissue is dark in colour, soft and flabby.

*Kidneys.*—Right weighs 1 lb 14 ozs.; left 1 lb. 13 ozs. Capsules strip easily. There are a few petechiæ dotted over the surfaces of the organs. *On section*, tissues pale, otherwise healthy in appearance.

*Stomach.*—Contains semi-digested food. The *cuticular* portion presents four spiroptera tumours, *villous* portion is healthy.

*Intestines.*—Healthy in appearance.

*Bladder.*—Healthy, contained no urine.

*Two Guinea Pigs, inoculated each with 0.25 c.c. of blood, containing very numerous Hæmatozoa, taken from the heart of Dog No. VI one hour post mortem.*

*Guinea Pig No. I.*

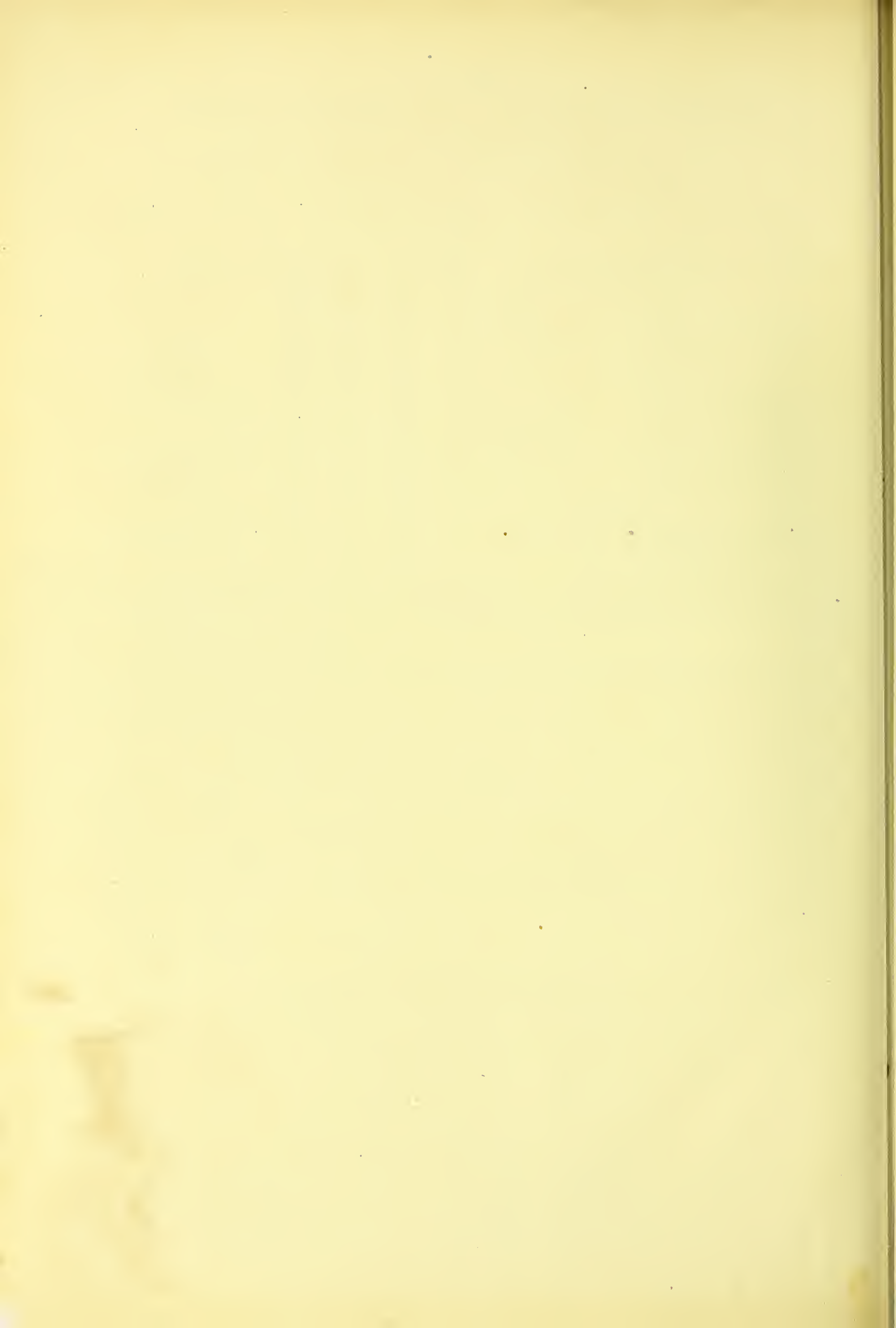
*Guinea Pig No. II.*

| Date.         | Temperature °C. |      | Condition of Blood. | Date.         | Temperature °C. |      | Condition of Blood. |
|---------------|-----------------|------|---------------------|---------------|-----------------|------|---------------------|
|               | A.M.            | P.M. |                     |               | A.M.            | P.M. |                     |
| 1893.         |                 |      |                     | 1893.         |                 |      |                     |
| July 25th ... | ...             | 39.0 | Hæmatozoa absent    | July 25th ... | ...             | 39.6 | Hæmatozoa absent.   |
| „ 26th ...    | 38.3            | 39.4 | „ „                 | „ 26th ...    | 38.2            | 39.2 | „ „                 |
| „ 27th ...    | 38.8            | 39.4 | „ „                 | „ 27th ...    | 38.6            | 39.0 | „ „                 |
| „ 28th ...    | 39.0            | 39.2 | „ „                 | „ 28th ...    | 38.2            | 39.2 | „ „                 |
| „ 29th ...    | 38.5            | 39.2 | „ „                 | „ 29th ...    | 38.4            | 39.2 | „ „                 |
| „ 30th ...    | 38.2            | 39.0 | „ „                 | „ 30th ...    | 38.4            | 39.0 | „ „                 |
| „ 31st ..     | 38.6            | 39.3 | „ „                 | „ 31st ...    | 38.4            | 39.1 | „ „                 |

## Guinea Pig No. I—continued.

## Guinea Pig No. II—continued.

| Date.               | Temperature °C. |      | Condition of Blood.  | Date.               | Temperature °C. |      | Condition of Blood. |
|---------------------|-----------------|------|----------------------|---------------------|-----------------|------|---------------------|
|                     | A.M.            | P.M. |                      |                     | A.M.            | P.M. |                     |
| 1893.               |                 |      |                      | 1893.               |                 |      |                     |
| August 1st ...      | 38.0            | 39.4 | Hæmatozoa absent ... | August 1st ...      | 38.2            | 39.4 | Hæmatozoa absent.   |
| " 2nd ...           | 38.4            | 40.0 | " " ...              | " 2nd ...           | 38.2            | 39.6 | " "                 |
| " 3rd ...           | 38.8            | 37.7 | " numerous ...       | " 3rd ...           | 38.4            | 37.6 | " "                 |
| " 4th ...           | 39.8            | 40.4 | " very numerous.     | " 4th ...           | 38.6            | 39.2 | " "                 |
| " 5th ...           | 39.4            | 39.6 | " numerous ...       | " 5th ...           | 38.2            | 39.0 | " few.              |
| " 6th ...           | 39.0            | 39.8 | " few ...            | " 6th ...           | 38.3            | 39.3 | " "                 |
| " 7th ...           | 38.8            | 39.2 | " absent ...         | " 7th ...           | 39.0            | 39.6 | " numerous.         |
| " 8th ...           | 38.2            | 38.8 | " " ...              | " 8th ...           | 39.6            | 40.2 | " very numerous.    |
| " 9th ...           | 38.2            | 39.0 | " " ...              | " 9th ...           | 38.1            | 38.4 | " numerous.         |
| " 10th ...          | 38.2            | 39.0 | " " ...              | " 10th ...          | 38.8            | 40.0 | " very numerous.    |
| " 11th ...          | 38.0            | 39.8 | " few ...            | " 11th ...          | 38.4            | 39.6 | " few.              |
| " 12th ...          | 39.0            | 39.3 | " numerous ...       | " 12th ...          | 33.2            | 39.6 | " numerous.         |
| " 13th ...          | 38.8            | 39.8 | " very numerous.     | " 13th ...          | 39.2            | 39.5 | " "                 |
| " 14th ...          | 39.2            | 39.6 | " swarming ...       | " 14th ...          | 38.8            | 39.6 | " very numerous.    |
| " 15th ...          | 39.0            | 38.8 | " " ...              | " 15th ...          | 39.1            | 38.6 | " numerous.         |
| " 16th ...          | 38.7            | 39.4 | " " ...              | " 16th ...          | 38.6            | 39.4 | " very numerous.    |
| " 17th ...          | 39.0            | 39.6 | " " ...              | " 17th ...          | 38.6            | 39.4 | " swarming.         |
| " 18th ...          | 39.0            | 37.1 | " " ...              | " 18th ...          | 39.1            | 36.8 | " "                 |
| " 19th ...          | 39.0            | 39.2 | " " ...              | " 19th ...          | 39.4            | 39.7 | " "                 |
| " 20th ...          | 39.0            | 39.5 | " numerous ...       | " 20th ...          | 39.1            | 39.8 | " very numerous.    |
| Death during night. |                 |      |                      | " 21st ...          | 39.2            | 39.5 | " swarming.         |
|                     |                 |      |                      | " 22nd ...          | 38.4            | 39.6 | " "                 |
|                     |                 |      |                      | " 23rd ...          | 35.0            | ...  | " "                 |
|                     |                 |      |                      | Death at 10-15 A.M. |                 |      |                     |





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D.  
DOG SURRA.

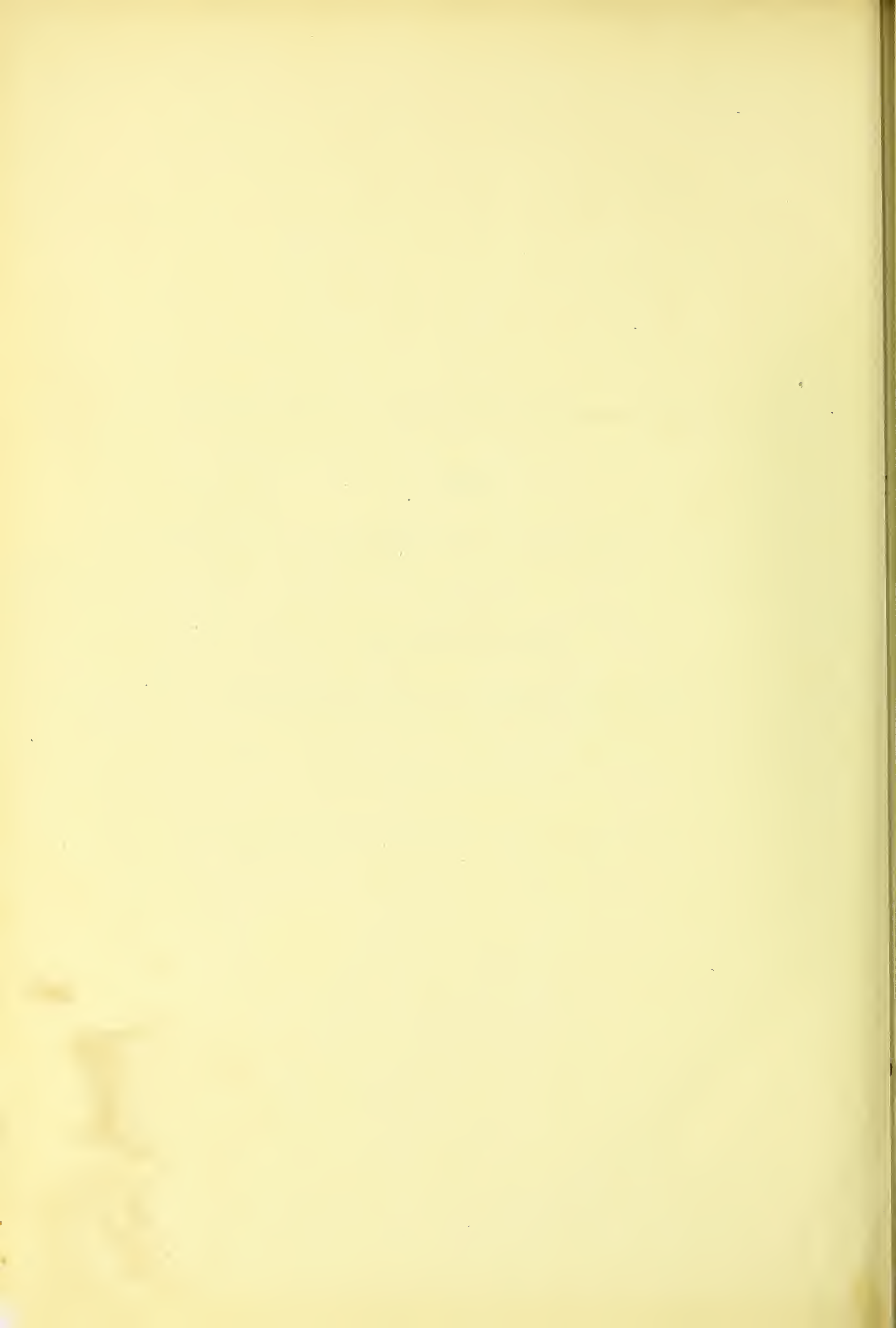
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APPENDIX III.

SUBCUTANEOUS INOCULATION WITH THE BLOOD OF DIFFERENT ANIMALS,  
WHICH HAD BEEN PREVIOUSLY INOCULATED FROM THE DOG.

GUINEA PIGS Nos. I, II; CAT No. II.

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*Guinea Pig I.*—Inoculated with 0.25 c. c. of blood, taken from the heart of Horse No. XCIII, 8 hours *post mortem*. Previous to death the hæmatozoa were swarming, 7th September 1893.

| Date.     | Temperature °C. |                | Condition of Blood. |
|-----------|-----------------|----------------|---------------------|
|           | A. M.           | P. M.          |                     |
| 1893.     |                 |                |                     |
| September | 7 ...           | 37.6      39.4 | Hæmatozoa absent    |
| "         | 8 ...           | 39.2      39.4 | " "                 |
| "         | 9 ...           | 38.4      39.0 | " "                 |
| "         | 10 ...          | 38.4      39.2 | " "                 |
| "         | 11 ...          | 38.8      39.4 | " "                 |
| "         | 12 ...          | 37.8      38.6 | " "                 |
| "         | 13 ...          | 38.0      38.8 | " "                 |
| "         | 14 ...          | 38.4      39.6 | " "                 |
| "         | 15 ...          | 38.2      39.0 | " "                 |
| "         | 16 ...          | 37.8      38.4 | " "                 |
| "         | 17 ...          | 37.8      38.6 | " "                 |
| "         | 18 ...          | 38.4      39.5 | " "                 |
| "         | 19 ...          | 37.7      39.2 | " "                 |
| "         | 20 ...          | 38.2      39.2 | " "                 |
| "         | 21 ...          | 37.4      39.1 | " "                 |
| "         | 22 ...          | 38.0      38.6 | " "                 |
| "         | 23 ...          | 38.2      39.0 | " "                 |
| "         | 24 ...          | 38.2      38.6 | " "                 |
| "         | 25 ...          | 38.0      39.2 | " "                 |
| "         | 26 ...          | 38.3      39.0 | " "                 |
| "         | 27 ...          | 38.0      39.2 | " "                 |
| "         | 28 ...          | 38.6      39.0 | " "                 |
| "         | 29 ...          | 37.6      39.0 | " "                 |
| "         | 30 ...          | 37.8      38.8 | " "                 |
| October   | 1 ...           | 38.2      38.7 | " "                 |
| "         | 2 ..            | 38.0      39.0 | " "                 |
| "         | 3 ...           | 38.0      39.0 | " "                 |
| "         | 4 ...           | 37.8      39.3 | " "                 |
| "         | 5 ...           | 37.9      39.4 | " "                 |
| "         | 6 ...           | 38.0      38.4 | " "                 |
| "         | 7 ...           | 39.4      39.6 | " "                 |
| "         | 8 ...           | 38.3      38.8 | " "                 |
| "         | 9 ...           | 38.0      ...  | " "                 |

This experiment was discontinued as no hæmatozoa had appeared in the blood.

*Guinea Pig II.*—Inoculated with 0.25 c. c. of blood, taken from the heart of Horse No. XCIII, 8 hours *post mortem*. Previous to death the hæmatozoa were swarming, 7th September 1893.

| Date.     |        | Temperature °C. |      | Condition of Blood. |
|-----------|--------|-----------------|------|---------------------|
|           |        | A.M.            | P.M. |                     |
| 1893.     |        |                 |      |                     |
| September | 7 ...  | 39.2            | 39.6 | Hæmatozoa absent.   |
| "         | 8 ...  | 38.8            | 39.6 | " "                 |
| "         | 9 ...  | 38.4            | 39.2 | " "                 |
| "         | 10 ... | 38.2            | 39.5 | " "                 |
| "         | 11 ... | 39.0            | 39.3 | " "                 |
| "         | 12 ... | 38.2            | 39.2 | " "                 |
| "         | 13 ... | 38.4            | 38.8 | " "                 |
| "         | 14 ... | 38.7            | 39.0 | " "                 |
| "         | 15 ..  | 38.8            | 39.3 | " "                 |
| "         | 16 ... | 38.2            | 38.9 | " "                 |
| "         | 17 ... | 38.2            | 38.8 | " "                 |
| "         | 18 ... | 39.0            | 38.8 | " "                 |
| "         | 19 ... | 38.7            | 39.2 | " "                 |
| "         | 20 ..  | 39.0            | 38.8 | " "                 |
| "         | 21 ... | 38.3            | 39.2 | " "                 |
| "         | 22 ... | 38.2            | 38.8 | " "                 |
| "         | 23 ..  | 38.8            | 38.7 | " "                 |
| "         | 24 ..  | 38.4            | 38.8 | " "                 |
| "         | 25 ... | 38.4            | 39.4 | " "                 |
| "         | 26 ... | 38.8            | 38.2 | " "                 |
| "         | 27 ..  | 39.0            | 39.4 | " "                 |
| "         | 28 ..  | 39.4            | 39.2 | " "                 |
| "         | 29 ..  | 38.4            | 39.0 | " "                 |
| "         | 30 ... | 38.4            | 38.8 | " "                 |
| October   | 1 ...  | 38.6            | 39.2 | " "                 |
| "         | 2 ...  | 38.8            | 39.2 | " "                 |
| "         | 3 ...  | 38.8            | 39.4 | " "                 |
| "         | 4 ...  | 38.4            | 39.2 | " "                 |
| "         | 5 ...  | 38.6            | 39.4 | " "                 |
| "         | 6 ..   | 38.8            | 39.2 | " "                 |
| "         | 7 ..   | 39.8            | 39.8 | " "                 |
| "         | 8 ...  | 38.8            | 39.4 | " "                 |
| "         | 9 ...  | 39.0            | ...  | " "                 |

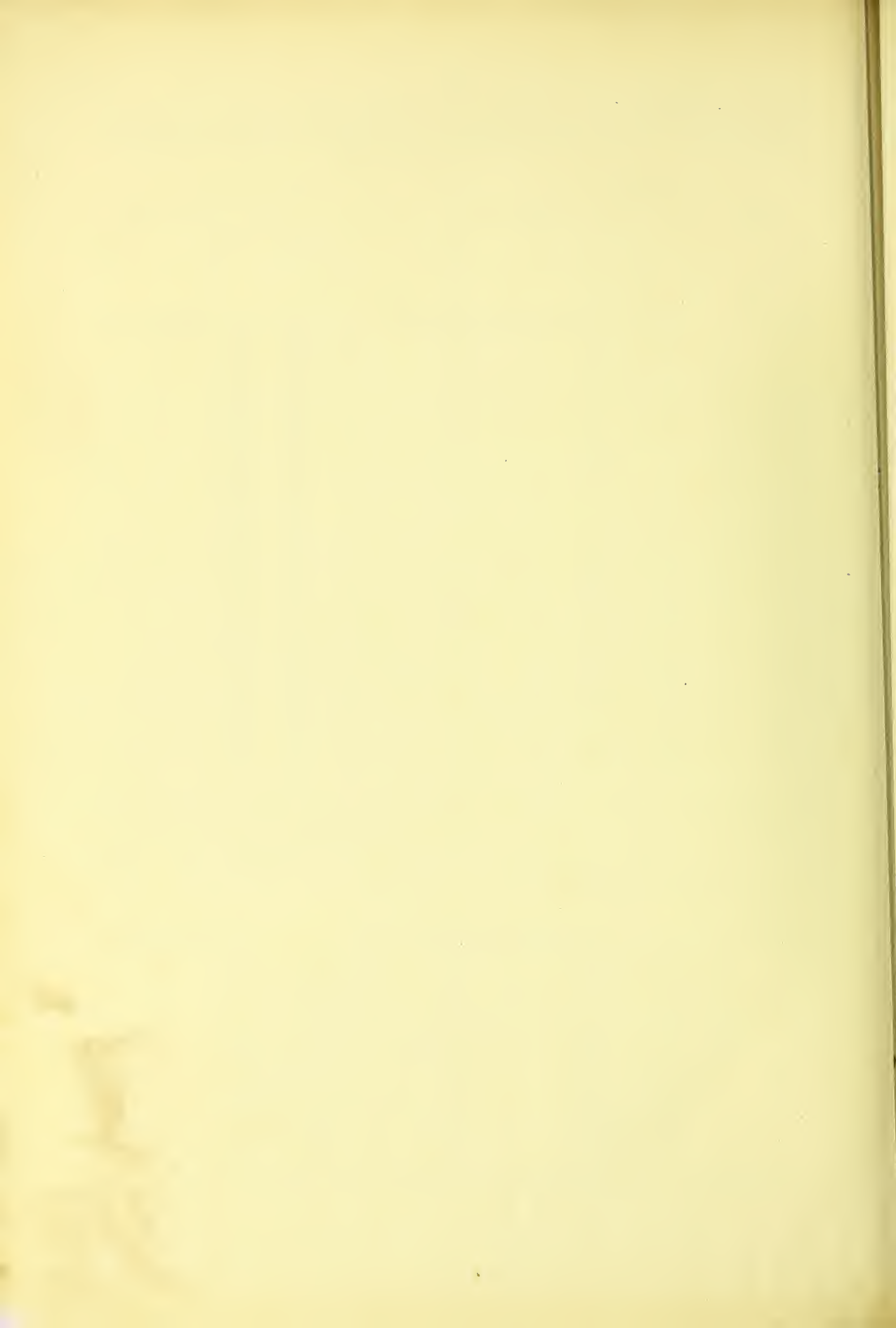
The investigation was continued for a further period of 68 days but no hæmatozoa appeared in the blood.

*Cat II.*—Inoculated with 0.5 c. c. of blood, taken from the heart of Horse No. XCIII, 8 hours *post mortem*. Previous to death the hæmatozoa were swarming.

| 1893.           |      |      |      | Condition of Blood. |
|-----------------|------|------|------|---------------------|
| Date.           | A.M. | P.M. |      |                     |
| September 7 ... | ...  | ...  | 38.7 | Hæmatozoa absent    |
| " 8 ...         | 38.8 | 39.2 | 39.6 | " "                 |
| " 9 ...         | 38.7 | 37.3 | 38.2 | " "                 |
| " 10 ...        | 38.2 | 38.6 | 39.0 | " "                 |
| " 11 ...        | 38.2 | 38.4 | 38.6 | " "                 |
| " 12 ...        | 38.4 | 37.8 | 38.8 | " "                 |
| " 13 ...        | 38.6 | 38.6 | 38.0 | " "                 |
| " 14 ...        | 38.5 | 38.1 | 38.3 | " "                 |
| " 15 ...        | 38.6 | 38.2 | 39.4 | " "                 |
| " 16 ...        | 38.8 | 38.2 | 38.6 | " "                 |
| " 17 ...        | 38.5 | 38.6 | 38.8 | " "                 |
| " 18 ...        | 38.5 | 38.0 | 38.6 | " "                 |
| " 19 ...        | 38.4 | 38.6 | 39.0 | " "                 |
| " 20 ...        | 38.2 | 38.2 | 39.3 | " "                 |
| " 21 ...        | 38.2 | 38.6 | 38.2 | " "                 |
| " 22 ...        | 37.8 | 38.0 | 38.2 | " "                 |
| September 23... | 37.5 | 38.0 | 38.4 | Hæmatozoa absent.   |
| " 24...         | 38.6 | 38.4 | 38.8 | " "                 |
| " 25...         | 38.6 | 38.2 | 38.4 | " "                 |
| " 26...         | 38.2 | 39.2 | 39.0 | " "                 |
| " 27...         | 38.0 | 38.2 | 38.8 | " "                 |
| " 28...         | 37.6 | 38.2 | 39.0 | " "                 |
| " 29...         | 38.3 | 38.2 | 38.6 | " "                 |
| " 30...         | 38.4 | 38.2 | 38.8 | " "                 |
| October 1...    | 38.5 | 38.4 | 38.8 | " "                 |
| " 2...          | 38.4 | 38.8 | 39.4 | " "                 |
| " 3...          | 38.2 | 38.5 | 38.4 | " "                 |
| " 4...          | 38.2 | 38.2 | 38.6 | " "                 |
| " 5...          | 39.2 | 39.6 | 39.6 | " "                 |
| " 6...          | 40.0 | 39.1 | 38.6 | " "                 |
| " 7...          | 39.0 | 38.9 | 38.7 | " "                 |
| " 8...          | 40.6 | 40.8 | 40.8 | " "                 |

The investigation was continued for a further period of 59 days, but no hæmatozoa appeared in the blood.





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E.  
FISH.

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APPENDIX I.

SUBCUTANEOUS INOCULATION OF ANIMALS WITH SOILED FISH BLOOD.

HORSES Nos. XXXIX, XLIII.

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## SUBCUTANEOUS INOCULATION OF ANIMALS WITH SOILED FISH BLOOD.

## HORSE No. XXXIX.

Grey country-bred horse, aged.

10th August 1891.—Temp. A.M.—P.M. 36.2°C. Blood healthy.

11th.—Inoculated with blood mixed with 0.6 per cent salt solution, taken immediately after death from 3 specimens of the *Rhynchobdella aculeata* "Baum" (Hindustani) "Warm" (Maratha). *Vide* Day's Fishes, page 338. Plate LXXII. No. I. Temp. A.M. 35.8°C., P.M. 36.1°C. Blood healthy.

12th.—There is an irregular-shaped raised tumour at the seat of inoculation, which exactly resembles that produced by the inoculation of Horse Surra blood, or from Rat's blood. Temp. A.M. 35.6°C. No hæmatozoa. Temp. P.M. 36°C.

13th.—The swelling at the seat of inoculation has increased and now presents a raised tense tumour, somewhat circular in form, which measures nearly 2" in diameter and is exceedingly tender on manipulation. Temp. A.M. 35.7°C. Hæmatozoa absent. Temp. P.M. 36°C.

14th.—The general health of the animal continues unaltered. The swelling and œdema at the seat of inoculation has increased in extent since yesterday and measures 3¼" in diameter; and in the centre of it, the tumour, stands raised an inch or more above the surrounding tissues. There are a few small petechiæ on the conjunctival membranes; but the visible mucous membranes are free from any yellow tinge. The appetite is good and the excretions natural in character. Temp. A.M. 35.8°C. Hæmatozoa absent. Temp. P.M. 36.7°C.

15th.—The general condition of the animal is unchanged, and the swelling and œdema remains *in statu quo*. Temp. A.M. 37.1°C. Hæmatozoa absent. Temp. P.M. 37.2°C.

16th.—Condition unchanged. Temp. A.M. 37°C. Hæmatozoa absent. Temp. P.M. 37.1°C.

17th.—Condition unchanged. Temp. A.M. 37°C. Hæmatozoa absent. Temp. P.M. 37.5°C.

18th.—The general condition of the animal is unchanged. The œdema at the seat of inoculation has certainly decreased in extent since yesterday. Temp. A.M. 37.2°C. Hæmatozoa absent. Temp. P.M. 37.2°C.

19th.—Condition unchanged. The swelling at the seat of inoculation is still more reduced in size, and the tenderness of the part is disappearing. The tumour can be lifted up bodily with the skin, showing that it does not involve the underlying structures. Temp. A.M. 36.8°C. Hæmatozoa absent. Temp. P.M. 37.2°C.

From the 20th August to the 25th, no hæmatozoa were observed in the blood, but the animal rapidly became weak, lost its appetite, and died at 9 P.M. on the 25th.

*Autopsy*—There was an entire absence of any pathological changes referable to the disease.

*Remarks*.—This animal was inoculated on the 11th August with blood from three fish containing hæmatozoa, very much resembling those found in Horse Surra blood. There was some swelling and œdema accompanied with tenderness on manipulation at the seat of inoculation on the following and subsequent days; but after a week, it commenced gradually to subside. No hæmatozoa were found in the blood of the horse, and the *post mortem* revealed no pathological changes.

## HORSE No. XLIII.

Grey entire, country-bred, aged.

19th September 1891.—Temp. A.M. 39°C., P.M. 38.4°C. Blood healthy.

20th.—" " 37.3°C " 38.1°C. "

21st.—" " 37.2°C " 37.3°C. "

22nd.—Temp. A.M. 35.7°C. Inoculated subcutaneously over the right scapular region with blood mixed with salt solution containing hæmatozoa resembling those found in "Surra." The blood was taken immediately after death from a specimen of the *Rhynchobdella aculeata*—"Baum" (Hindustani) "Warm" (Maratha). *Vide* Day's Fishes, page 338. Plate LXXII. No. I. The Fish weighed 171 grammes. Temp. P.M. 37.4°C.

23rd.—There is a raised swelling at the seat of inoculation together with tenderness on manipulation. Temp. A.M. 36.8°C. Hæmatozoa absent. Temp. 1 P.M. 38.4°C; 5 P.M. 38°C.

24th.—The swelling at the seat of inoculation has increased and the tumour is tense and more tender on manipulation. Temp. A.M. 37.2°C. Hæmatozoa absent. Temp. 1 P.M. 38.6°C; 5 P.M. 37.3°C.

25th.—The swelling at the seat of inoculation remains *in statu quo*. Temp. A.M. 36.2°C. Hæmatozoa absent. Temp. 1 P.M. 37.5°C; 5 P.M. 37.2°C.

26th.—The swelling at the seat of inoculation is considerably reduced in size; the tenderness has disappeared. There are several small ecchymoses on both conjunctivæ, the right more especially, and there is a muco-purulent discharge from the left nostril. Temp. A.M. 36.3°C. Hæmatozoa absent. Temp. 1 P.M. 37.6°C; 5 P.M. 37.1°C.

From September 27th to November 23rd, when the animal died, no hæmatozoa were observed in the blood, and the temperature was normal, except from the 8th November to the 13th inclusive, when it rose slightly, ranging between 37°C. and 39.5°C. On the 23rd October and 11th November, numerous well-marked ecchymoses were present on both membranæ nictitantes, and on the latter date the mucous membranes were tinged yellow.

*Autopsy*.—The body is somewhat emaciated and the tissues are tinged a light orange colour, a few ecchymoses of a dark-red hue are present on the membranæ nictitantes. There is also slight œdema of the hind limbs.

*Thorax*.—The pleural cavities are free from fluid and there are no pleuritic adhesions.

*Lungs*.—The surface of the *right lung* is for the most part of a pink colour, dotted over with a number of small purple coloured sub-pleural extravasations. The apex is the seat of a localized emphysema and near the apex of the organ is a somewhat circular-shaped patch of a dark-red colour. Under the visceral pleuræ covering this area is deposited a thin layer of

jelly-like exudation of a light yellow colour. *On Section*, this portion of the organ presents a dark-red colour and is the seat of consolidation, and as in the case of Horse No. XLIX the jelly-like material dips down from the superior surface of the lung between the lobules, distinctly isolating one lobule from another, with a layer of exudation varying in thickness from one-twelfth to one-fifth inch. The greater portion of this organ is well filled with air and is apparently healthy. The *left lung* presents a dark purple colour due to hypostatic congestion. There is localized emphysema at the apex, and on careful examination only a few sub-pleural extravasations can be observed. *On Section* and gentle pressure dark coloured blood exudes from the cut surfaces, but the tissue presents a healthy appearance.

The cavity of the *pericardium* contains  $1\frac{1}{2}$  ozs. of a turbid, yellow-coloured fluid, but on microscopical examination no hæmatozoa are found.

*Heart*.—Weighs 5 lbs. 10 ozs. The external surface of the muscular tissue is dotted over with a few small sub-pericardial extravasations of blood, which do not invade the tissue beneath them.

*On section*.—The right and left cavities contain blood clots presenting a variegated colouration, but with the exception of the right ventricle, in which some few small sub-endocardial extravasations are to be observed, the other cavities are free from them.

*Abdominal Cavity*.—Is free from fluid.

*Liver*.—Is normal in size, weighs 11 lbs. 14 ozs., but presents old signs of perihepatitis involving the right lobe. *On section*, the tissues present a healthy appearance.

*Spleen*.—Weighs 4 lbs. 3 ozs., is double the normal size, and there are a few red-brick coloured sub-capsular petechiæ. *On section*, the tissues are found to be somewhat soft in consistency.

*Kidneys*.—Right weighs 1 lb. 7 ozs., the left 1 lb.  $5\frac{1}{2}$  ozs. The capsules strip easily and the cortical portions look somewhat pale. *On section*, the tissues present a healthy appearance.

*Stomach*.—The cuticular portion healthy; the mucous membrane of the villous portion also presents a healthy appearance, with the exception of a small (spiroptera) tumour.

*The small Intestines*.—Healthy.

*The large Intestines*.—Healthy.

*Bladder*.—Healthy.

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# FISH.

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## APPENDIX II.

SUBCUTANEOUS INOCULATION AND RE-INOCULATION WITH  
SOILED FISH BLOOD.

RESULT NEGATIVE.

HORSE No. XLIX.

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(A) SUBCUTANEOUS INOCULATION AND RE-INOCULATION ON TWO SUBSEQUENT  
OCCASIONS WITH SOILED FISH BLOOD.

RESULTS NEGATIVE.

(B) FURTHER INOCULATION OF THE SAME ANIMAL WITH HORSE-SURRA BLOOD.

RESULTS POSITIVE.

HORSE No. XLVII.

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## SUBCUTANEOUS INOCULATION AND RE-INOCULATION WITH SOILED FISH BLOOD.

RESULT NEGATIVE.

HORSE No. XLIX.

Black mare, aged, in fair condition and apparently healthy.

*15th October 1891.*—Inoculated subcutaneously with blood containing numerous hæmatozoa, mixed with normal saline solution, taken immediately after death, from the hearts of several specimens of fish—*Rhynchobdella aculeata* obtained from the waters of the River Mula-Mutha.

*16th.*—There is some swelling and œdema at the seat of inoculation. Temp. A.M.  $37.3^{\circ}$  C. No hæmatozoa. Temp. P.M.  $38.1^{\circ}$  C.

*17th.*—The swelling and œdema at the seat of inoculation has increased in extent, and the tumour presents a somewhat circular form, and is tender on manipulation. Temp. A.M.  $37.3^{\circ}$  C. No hæmatozoa. Temp. 1 P.M.  $37.7^{\circ}$  C.; 5 P.M.  $38.4^{\circ}$  C.

*18th.*—The swelling and œdema at the seat of inoculation has decreased during the night, but the tenderness is still present. There are no ecchymoses on the conjunctivæ. Temp. A.M.  $37.4^{\circ}$  C. No hæmatozoa. Temp. 1 P.M.  $38.1^{\circ}$  C.; 5 P.M.  $38.3^{\circ}$  C.

*19th.*—All swelling and œdema at the seat of inoculation has entirely disappeared, and there is only a slight thickening under the skin. There are no conjunctival ecchymoses. Temp. A.M.  $37.6^{\circ}$  C. No hæmatozoa. Temp. 1 P.M.  $38.3^{\circ}$  C.; 5 P.M.  $38^{\circ}$  C.

From the 20th October to the 28th there was no change in the condition of the animal. The temperature was normal and no hæmatozoa were observed in the blood.

*29th.*—Re-inoculated the animal over both scapular regions, with blood (mixed with salt solution) taken from a fish of the same species, as that used on the previous occasion. Temp. A.M.  $37.3^{\circ}$  C. No hæmatozoa. Temp. 1 P.M.  $37.8^{\circ}$  C.; 5 P.M.  $38.2^{\circ}$  C.

*30th.*—There are well marked petechiæ on the conjunctival membranes, and some swelling and œdema at the point of inoculation. Temp. A.M.  $37.3^{\circ}$  C. No hæmatozoa. Temp. 1 P.M.  $38^{\circ}$  C.; 5 P.M.  $39^{\circ}$  C.

*31st.*—The swelling has considerably diminished at the seat of inoculation on the right side, and there is only slight thickening of the tissues over and around the seat of inoculation on the left side. Temp. A.M.  $37.4^{\circ}$  C. No hæmatozoa. Temp. 1 P.M.  $38^{\circ}$  C.; 5 P.M.  $38.4^{\circ}$  C.

From the 1st November to the 6th, the animal appeared in good health and no hæmatozoa were observed in the blood; but there was a gradual rise in temperature to  $39.5^{\circ}$  C. on the evening of the 6th.

*7th.*—There is a muco-purulent discharge from the right nostril observed this morning for the first time, but no sign of ulceration in either nostril, and only very slight congestion of the vessels of the nasal septum, on the opposite side. There is continued gurgling in the intestines. The appetite is good. Temp. A.M.  $40.1^{\circ}$  C. No hæmatozoa. Temp. 1 P.M.  $40.5^{\circ}$  C.; 5 P.M.  $40.2^{\circ}$  C.

*8th.*—Temp. A.M.  $40.2^{\circ}$  C. No hæmatozoa. Temp. 1 P.M.  $40.4^{\circ}$  C.; 5 P.M.  $40.6^{\circ}$  C.

*9th.*—The animal is losing flesh; the appetite has fallen off. There is a slight yellowish tinge of the membranes and a catarrhal discharge from both nasal passages. Temp. A.M.  $39.6^{\circ}$  C. No hæmatozoa. Temp. 1 P.M.  $40.2^{\circ}$  C.; 5 P.M.  $40.5^{\circ}$  C.

*10th.*—There are numerous large and dark-coloured ecchymoses on the left membrana nictitans, but the right conjunctival membrane is quite clear. Temp. A.M.  $39.7^{\circ}$  C. No hæmatozoa. Temp. 1 P.M.  $40.1^{\circ}$  C.; 5 P.M.  $40.4^{\circ}$  C.

*11th.*—The membranes continue to present a yellowish colour. There are large petechiæ still present on the left membrana nictitans, but they remain absent from that of the right. Temp. A.M.  $40.0^{\circ}$  C. No hæmatozoa. Temp. 1 P.M.  $40.6^{\circ}$  C.; 5 P.M.  $41.4^{\circ}$  C.

*12th.*—This morning there are large petechiæ on the right membrana nictitans, and they are also numerous on the left. Temp. A.M.  $40.3^{\circ}$  C. No hæmatozoa. Temp. 1 P.M.  $40.6^{\circ}$  C.; 5 P.M.  $41.4^{\circ}$  C.

*13th.*—Temp. A.M.  $41^{\circ}$  C. No hæmatozoa. Temp. 1 P.M.  $41.5^{\circ}$  C.; 5 P.M.  $40.6^{\circ}$  C.

*14th.*—Temp. A.M.  $40.3^{\circ}$  C. No hæmatozoa. Temp. 1 P.M.  $40.4^{\circ}$  C.; 5 P.M.  $41.4^{\circ}$  C.

*15th.*—The animal has, during the past few days, been gradually getting weaker and the appetite has remained poor. Temp. A.M.  $39^{\circ}$  C. No hæmatozoa. Temp. 1 P.M.  $41.3^{\circ}$  C.; 5 P.M.  $40.7^{\circ}$  C.

*16th.*—At one o'clock this morning, the animal fell, and death ensued an hour later—2 A.M.

*Autopsy.*—Eight hours after death. The body is considerably emaciated. The tissues are all more or less tinged a yellow colour, and large ecchymoses are present on the conjunctivæ.

*Thorax.*—Pleural cavities contain no fluid, and there are no pleuritic adhesions.

*Lungs.*—The superior surfaces of the lungs present a variegated appearance made up of varying degrees of pink, reddish-yellow, and purple-blue. The apices are the seat of localized emphysema. Symmetrically placed in both lungs in the middle of the anterior lobes, eight inches from the apices, are two circumscribed patches of consolidated tissue, dark-red in colour, somewhat wedge-shaped and occupying in each case an area of about 6 or 7 square inches. The posterior lobes of the organs present patches of yellow coloured exudation lying beneath the visceral pleuræ; and in addition there are numerous circular extravasations of blood dotted over the sub-pleural surfaces of the organs, more especially on the posterior half of the left lung. On section, lying beneath the pleuræ covering these consolidated portions, there are layers of yellow (jelly-like) exudation, which are found to dip down between the lobules and so divide them off, in some instances distinctly isolating one lobule from another. A certain amount of fluid blood exudes from the cut surfaces of the tissue, but the latter presents a healthy appearance.

The Pericardium contains two ounces of an amber-coloured fluid.

*Heart.*—The right side of the organ is dilated, the left is contracted. The external surface presents several patches of extravasation, the most extensive measuring  $1.5'' \times .75''$ , made up of small irregular-shaped



blood extravasations, which are found only to invade the muscular structure to a limited extent. *On section*, the right side of the heart is found to contain a large quantity of clots varying in colour from a light yellow through orange red to a dark green. The *Right Auricle* presents no pathological changes, but the *Right Ventricle* is the seat of a large number of sub-endocardial extravasations, the muscoli papillares in this case being free. The *Left Auricle* presents a healthy appearance. The walls of the *Left Ventricle* are hypertrophied, and the cavity contains a few dark clots. There are a few extravasations lying under the endocardial lining.

*Liver*.—Weighs 15 lbs. 9½ ozs., and is considerably enlarged; the capsule is free from signs of any old perihepatitis. *On section*, the tissues present a yellowish-red appearance, but there are no calcareous bodies present.

*Spleen*.—Weighs 6 lbs. 4 ozs.; is three times the normal size; the tissues are firm, and there are a few sub-capsular petechiæ. *On section*, the tissues are dark in colour, but healthy in appearance.

*Kidneys*.—Right organ weighs 1 lb. 8 ozs. Left weighs 1 lb. 4½ ozs. The capsules strip easily. The external portion is pale, but presents no pathological changes.

*Stomach*.—Is large and *on section* is found to contain some semi-digested food. The coats are free from ulceration, but there is a small *spiroptera* tumour on the villous portion near the boundary line.

The *Small Intestines* present numerous ecchymoses dotted over their whole length; and here and there small patches are to be observed made up of aggregations of small extravasations of blood. There is however no ulceration, and Peyer's Patches present a normal appearance.

The *Cæcum* presents a healthy appearance, but there are several patches of congestion involving the walls of the Colon, but no ulceration.

The *Rectum* also presents a healthy appearance.

Bladder.— Ditto.

A.—Subcutaneous inoculation and re-inoculation on two subsequent occasions with soiled fish blood—

RESULTS NEGATIVE.

B.—Further inoculation of the same animal with Horse Surra blood—

RESULT POSITIVE.

#### HORSE No. XLVII.

Grey country-bred horse, in fair condition and apparently healthy.

8th October 1891.—Temp. P.M. 36·8°C.

9th Temp. P.M. 36·1°C. P.M. 36·8°C.

10th " " 36·0°C. " 36·7°C.

11th " " 35·8°C. " 37·5°C.

12th Temp. A.M. 35·8°C. P.M. 37·8°C.

13th " " 36·0°C. " 37·6°C.

14th " " 35·7°C. " 37·2°C.

On the above dates the blood presented a healthy appearance.

15th.—The animal appears healthy, the visible mucous membranes are clean and there are no petechiæ on the conjunctivæ. The appetite is good, and the excretions normal in character. Temp. A.M. 36·3°C. Blood healthy. At 4 P.M. inoculated subcutaneously over the left scapular region with blood mixed with 0·6 per cent. salt solution, obtained from a large-sized fish (*Barbus carniaticus*). Temp. P.M. 38°C.

16th.—There is a raised, somewhat circular swelling at the seat of inoculation, tense and tender to the touch. The general condition of the animal is unchanged. Temp. A.M. 35·7°C. No hæmatozoa. Temp. P.M. 37·5°C.

17th.—The swelling at the seat of inoculation has increased since yesterday and is surrounded by an œdematous zone an inch in width. There are no conjunctival petechiæ. Temp. A.M. 37·5°C. No hæmatozoa. Temp. 1 P.M. 38·1°C. Temp. 5 P.M. 38·2°C.

18th.—The swelling at the seat of inoculation has not altered in size during the past twenty-four hours, but the tumour still feels tense, and is tender on manipulation. Temp. A.M. 36·8°C. No hæmatozoa. Temp. 1 P.M. 38·1°C.; 5 P.M. 37·6°C.

19th.—The swelling and œdema at the point of inoculation has commenced to disappear, and the tenderness, although present, is not so marked as previously. Temp. A.M. 36°C. No hæmatozoa. Temp. 1 P.M. 37·5°C.; 5 P.M. 38·4°C.

20th.—The swelling and œdema have again decreased, so that the latter has almost entirely disappeared, leaving a small somewhat circular tumour, semi-solid to the touch. The visible mucous membranes are clean, and there are no conjunctival petechiæ present. Temp. A.M. 36·5°C. No hæmatozoa. Temp. 1 P.M. 37·4°C.; 5 P.M. 38·3°C.

From the 21st until the 28th inclusive, the animal appeared in good health, the temperature remained normal and no hæmatozoa were observed in the blood, but a few ecchymoses of a bright-red colour appeared on the right membrana nictitans on the 23rd.

29th.—The animal appears now to be in normal health. The visible mucous membranes are clear, and the conjunctival petechiæ have entirely disappeared. Re-inoculated subcutaneously over the right scapular region with blood, mixed with salt solution, taken from a specimen of carp (*Barbus carniaticus*). Temp. A.M. 36·6°C. No hæmatozoa. Temp. 1 P.M. 37·4°C.; 5 P.M. 37·7°C.

30th.—There is swelling and œdema at the seat of inoculation, exactly of the same nature as occurred after the former injection. There is a raised, somewhat circular-shaped tumour, an inch and a half in diameter, tense and tender on manipulation. Temp. A.M. 37°C. No hæmatozoa. Temp. 1 P.M. 37·8°C.; 5 P.M. 38·1°C.

31st.—The swelling and œdema at the seat of inoculation have increased, and the tumour now measures 5" × 4". There are numerous recent large petechiæ on the conjunctivæ, dark-red in colour. Temp. A.M. 37°C. No hæmatozoa. Temp. 1 P.M. 38°C.; 5 P.M. 38°C.

1st November.—The swelling and œdema are unchanged. Temp. A.M. 37·1°C. No hæmatozoa. Temp. 1 P.M. 38·1°C. The urine is turbid, dirty yellow in colour. Sp. Gr. 1·018. Alkaline, no albumen. Temp. 5 P.M. 38·2°C.



2nd.—The œdema is subsiding and has disappeared to a considerable extent. The conjunctival petechiæ retain their dark hue. Temp. A.M. 37°C. No hæmatozoa. Temp. 1 P.M. 37.5°C. The urine is turbid, yellowish-brown in colour. Sp. Gr. 1.036. Alkaline. No albumen. Temp. 5 P.M. 38°C.

From the 3rd until the 18th there was no change in the condition of the animal, there being only a slight thickening of the skin at the seat of inoculation on the latter date. No hæmatozoa were observed in the blood.

19th.—The animal was subcutaneously inoculated on both scapular regions with blood taken from another specimen of the carp (*Barbus carnaticus*). Temp. A.M. 37.8°C. No hæmatozoa. Temp. P.M. 38.4°C. The urine is turbid, greenish-yellow in colour. Sp. Gr. 1.040. Alkaline. No albumen. Temp. 5 P.M. 38.7°C.

20th.—There is considerable swelling and œdema at the two seats of inoculation accompanied by the symptoms before described. Temp. A.M. 36.1°C. No hæmatozoa. Temp. 1 P.M. 38.2°C.; 5 P.M. 38°C.

21st.—There are several bright-coloured ecchymoses on the conjunctival membranes, but the swellings at the points of inoculation, which yesterday were so well marked, are this morning reduced in size. Temp. A.M. 36.7°C. No hæmatozoa. Temp. 1 P.M. 37.8°C.; 5 P.M. 38.1°C.

22nd.—This morning there is still further reduction in the swellings at the seats of inoculation. Temp. A.M. 36.3°C. No hæmatozoa. Temp. 1 P.M. 37.5°C.; 5 P.M. 38.1°C.

From the 23rd November until the 30th November, there was no change in the condition of the animal, and no hæmatozoa were observed in the blood, but on the latter date a few dark-red ecchymoses appeared on the membranæ nictitantes.

From the 1st December 1891 until the 8th March 1892, the animal remained in good health, and no hæmatozoa were observed in the blood.

On the 9th March 1892, in order to test whether any protection had been afforded to the animal by the 3 previous inoculations with soiled fish blood, the animal was inoculated subcutaneously over the left scapular region with 1 c.c. of blood swarming with hæmatozoa drawn from the internal jugular vein of Horse No. LV (Horse Surra). Temp. A.M. 37.5°C., P. 36., R. 24. No hæmatozoa. Temp. 1 P.M. 38.2°C.; 5 P.M. 38.3°C.

10th.—Condition unchanged. Temp. A.M. 36.7°C., P. 40, R. 24. No hæmatozoa. Temp. 1 P.M. 38.2°C.; 5 P.M. 38.3°C.

11th.—Small tumour at the seat of inoculation, the size of a small walnut 1½" in diameter. Temp. A.M. 37.4°C., P. 50, R. 24. No hæmatozoa. Temp. 1 P.M. 38.3°C.; Temp. 5 P.M. 38.4°C.

12th.—The tumour at the seat of inoculation is somewhat increased in size. Temp. A.M. 38.1°C., P. 52, R. 24. Temp. 1 P.M. 38.5°C.; 5 P.M. 38.7°C.

13th.—The tumour at the seat of inoculation is considerably increased in size, upper end 4" × 2½" and lower end 4" × 1½", length of swelling from upper to lower point 7". Conjunctival extravasations are numerous in both eyes. Temp. A.M. 38.3°C., P. 92, R. 26. No hæmatozoa. Temp. 1 P.M. 39.1°C.; 5 P.M. 39.2°C.

14th.—The general condition is unchanged, but the tumour is smaller and it has lost some of the tension and tenderness observed yesterday. Temp. A.M. 39.3°C., P. 52, R. 16. Hæmatozoa few. Temp. 1 P.M. 40.5°C.; 5 P.M. 40.7°C.

15th.—The tumour is somewhat reduced in size, breathing peculiar in character: first a very deep inspiration followed by four or five very shallow ones, succeeded by one or two deep ones. Some blood-stained fluid escaping from the inner canthus of both the eyes. Surra hæmatozoa very numerous in this discharge. Temperature A.M. 39.6°C., Pulse 60, Respiration 30. Hæmatozoa very numerous. Temperature 1 P.M. 40.1°C.; 5 P.M. 40°C.

16th.—Condition unchanged. Temperature A.M. 40.3°C., Pulse 84, Respiration 24. Hæmatozoa swarming. Temperature 1 P.M. 41.3°C.; 5 P.M. 41.3°C.

17th.—Condition unchanged. Temperature A.M. 40°C., Pulse 80, Respiration 26. Hæmatozoa swarming. Temperature 1 P.M. 42.1°C.; 5 P.M. 41.4°C.

18th.—Condition unchanged. Temperature A.M. 38.3°C., Pulse 56, Respiration 32. Hæmatozoa few. Temperature 1 P.M. 38.2°C.; 5 P.M. 38.3°C.

19th.—Condition unchanged. Temperature A.M. 37.7°C., Pulse 60, Respiration 32. No hæmatozoa. Temperature 1 P.M. 38.7°C.; 5 P.M. 39.1°C.

20th.—Some œdema collecting at the most dependent part of the abdomen; sheath beginning to swell; the hind feet appear to be very sensitive. Temperature A.M. 39.3°C., Pulse 64, Respiration 40. No hæmatozoa. Temperature 1 P.M. 40.3; 5 P.M. 40.6°C.

21st.—Respiration laboured and jerky, pulse quite of the sledge-hammer type, animal feeding well. Temperature A.M. 38.6°C., Pulse 52, Respiration 32. Hæmatozoa few. Temperature 1 P.M. 39.6°C.; 5 P.M. 39.6°C.

22nd.—Condition unchanged. Temperature A.M. 37.8°C., Pulse 60, Respiration 32. Hæmatozoa very numerous. Temperature 1 P.M. 39.2°C.; 5 P.M. 39.5°C.

23rd.—Condition unchanged. Temperature A.M. 40.4°C., Pulse 84, Respiration 52. Hæmatozoa swarming. Temperature 1 P.M. 40°C.; 5 P.M. 40.8°C.

24th.—Condition unchanged. Temperature A.M. 40.4°C., Pulse 84, Respiration 52. Hæmatozoa swarming. Temperature 1 P.M. 40°C.; 5 P.M. 40.8°C.

25th.—Condition unchanged. Temperature A.M. 39.4°C., Pulse 82, Respiration 21. Hæmatozoa few. Temperature 1 P.M. 40.1°C.; 5 P.M. 39.8°C.

26th.—Condition unchanged. Temperature A.M. 38.3°C., Pulse 76, Respiration 18. Hæmatozoa numerous. Temperature 1 P.M. 40.4°C.; 5 P.M. 39.8°C.

27th.—Condition unchanged. Temperature A.M.  $39.2^{\circ}\text{C}$ ., Pulse 72, Respiration 40. Hæmatozoa swarming. Temperature 1 P.M.  $40.1^{\circ}\text{C}$ .; 5 P.M.  $40.3^{\circ}\text{C}$ .

28th.—The animal is much weaker this morning. Edema of belly and sheath has not increased since last noted. Temperature A.M.  $37.5^{\circ}\text{C}$ ., Pulse 60, Respiration 22. Hæmatozoa swarming. Temperature 1 P.M.  $39^{\circ}\text{C}$ .; 5 P.M.  $37.8^{\circ}\text{C}$ . Fell at 6 P.M. and remained lying quietly until 5 A.M., when death took place on the 29th.

*Autopsy* four and a half hours after death.

The body is fairly nourished, there is slight œdema of the belly and sheath.

There is no fluid in the pleural cavities and no pleuritic adhesions.

*Lungs*.—Are pale in colour and well distended with air. There is some localized emphysema at the apices, but no sub-pleural petechiæ or extravasations. *On section*, the lung tissue is red in colour but appears healthy.

*Heart*.—Weighs 5 lbs.  $12\frac{1}{2}$  ozs. There is nothing abnormal to be observed externally and *on section*, there are no sub-endocardial petechiæ visible.

*Liver*.—Weighs 12 lbs. 8 ozs. There are old signs of peri-hepatitis on the convex surface of the *Right* lobe, and a few small yellow calcareous bodies lying under the Glisson's capsule. *On section*, no calcareous bodies are observed in the depth of the tissue.

*Spleen*.—Weighs 5 lbs., enlarged to more than twice the normal size. Petechiæ are absent from the surface of the capsule. The tissues are firm and healthy on section.

*Kidneys*.—Right weighs 1 lb. 6 ozs, and left weighs 1 lb. 10 ozs. Capsules strip easily, and no petechiæ are visible on the external cortical surface. *On section*, no pathological changes observed.

*Stomach*.—Tumour close to the line of demarcation of the two coats, but occupying a site on the *villous* portion of the lining membrane. The tumour (*Spiroptera megastoma*) is  $1\frac{3}{4}$  inches in diameter at the base.

*Intestines, small and large*.—Present a healthy appearance.









